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Development of a Performance Dashboard Concept for Senior IT Management at BNP Paribas London

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BNP PARIBAS

Development of a Performance Dashboard Concept for Senior IT Management at BNP Paribas

A Major Qualifying Project Report

Submitted to the Faculty of

WORCESTER POLYTECHNIC INSTITUTE

In partial fulfilment of the requirements for the

Degree of Bachelor of Science

Submitted To:

Mr Wells Powell, BNP Paribas Liaison

Mr Alan Cable, BNP Paribas Liaison

Professor Arthur Gerstenfeld, Advisor

Submitted By:

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19 December 2010

ABSTRACT

Managers in large corporations often use a significant amount of data from various sources to manage their department. The goal of this project was to create a Performance Dashboard Concept that will serve as a blueprint for the future development of an information dashboard that measures the performance of the Fixed Income IT Deal Capture department. The dashboard would allow managers to select certain key performance indicators to display and would provide real-time updates whenever possible. Ideally, the dashboard will be integrated with a newly developed internal website that will be used by Fixed Income IT on a global level.

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- Dave Morris for showing us examples of dashboard platforms, widget examples, and for helping us to develop a scheme that can be used after the completion of our project.
- Vincent Benita for meeting with us and helping us understand what a dashboard could look like for other managers within the department.
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AUTHORSHIP

Over the course of this project, many ideas were presented and discussed amongst both team members and were frequently edited together. Therefore, both team members have contributed to each section of this report. The following is a list of the primary author(s) of each section:

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EXECUTIVE SUMMARY

Execution managers at BNP Paribas receive at least 5 monthly dashboard reports with more than 100 pages of A3 paper summarizing performance data for each of the execution areas. It takes a significant amount of time for execution managers to scan these reports and find relevant information for their specific execution areas. The creation of a dashboard would allow execution managers to visualise relevant information about their department summarised into one integrated view. The idea of this dashboard is that it can be customised by each manager to view only the information they are interested in. The development of the actual dashboard is a long process and requires a significant amount of research to identify user requirements, compile data sources, create the layout designs, and so on. This project focuses on generating the dashboard vision and structuring the initial steps for developing a future dashboard.

A dashboard can be used to show a significant amount of information in one integrated view. Small, customisable graphs and tables, here termed “widgets”, display specific Key Performance Indicators (KPIs) used to monitor the performance of a team or department. A “widgetised” dashboard includes many widgets that can be dragged in, out, and around the screen. The layout and design of the dashboard is visually appealing as well as functional. Ideally, widgets are updated in real time so the user can see the most up-to-date information instead of waiting for monthly reports. Widgets should also have customisable time scales and view/filter options to allow the user to see into the past and future, and include/exclude specific data content.

This project focuses primarily on the dashboard vision of our sponsor, Mr Wells Powell, who is the execution manager for the Fixed Income IT Deal Capture department. However, the idea is that once the dashboard is created, it can be applied to other execution areas and to lower levels of management, such as programme and project managers. The views for different managers would also be customisable and updated in real time.

We have worked with BNP Paribas London over the course of 8 weeks in order to develop a Performance Dashboard Concept for managers of the Fixed Income IT Deal Capture department. This goal was completed through the following objectives:

1. Understanding the user needs of the dashboard and preferred information display type.
2. Generating a structured and descriptive scheme of the dashboard widgets.
3. Developing Excel-based widgets based mainly on real data.
4. Creating a potential dashboard layout.

In order to develop a Performance Dashboard Concept, we began by meeting with our sponsor to understand the user needs of the dashboard and how the user would prefer to see information in terms of graphs, charts, tables, etc. Next we generated schemes for Recruitment, Projects, and Budget that describe all the widgets under each category. Once the schemes were completed, we created widgets based on actual data using Excel. Finally, we created a potential dashboard layout based on online examples and examples from current dashboards at BNP Paribas. Once the Performance Dashboard Concept was developed, we created a list of recommendations.

1. INTRODUCTION

Many companies have a significant amount of information that needs to be shared throughout their department or across several departments. To help different employees keep track of their own information as well as information from their co-workers, data reporting tools known as dashboards help to present data from many sources as a concise display. This information is usually very complex and only the most imperative data needs to be shared for others to see. SharePoint Dashboard is a tool that can be used to help manage a significant amount of information and to allow for easy access across a large audience.

At BNP Paribas London, much time is lost because senior managers have to review and analyse various reports in order to find relevant information about their department. Although this data may be updated on a daily basis within the company's systems, managers often receive these reports only at the end of the month. Therefore, there is a need for a dashboard where senior managers would be able to find real-time information about their department.

Our sponsor is interested in creating a dashboard using SharePoint for senior management to use on a daily basis. This project involves preparing the framework for the dashboard development by compiling a significant amount of data and determining the best way to present the information in the form of customisable widgets. Data needs to be transformed from its original source into a visual, summarised format that can be easily understood by other managers. A Red/Amber/Green (RAG) system allows users to efficiently identify underlying problem areas and to determine which situations require immediate attention. The end product should allow for different customisable views, so other managers can easily see an overview of the information they need from the dashboard.

2. BACKGROUND

Dashboards are used by BNP Paribas and other corporations to summarise important information in one integrated view. BNP Paribas' desire to create a dashboard will help reduce the time it takes for management to interpret and look through reports in search of relevant data. By taking a closer look at SharePoint Dashboard and examples, as well as the data systems and sources needed to find the information, we gained a better understanding of how to develop our dashboard framework for BNP Paribas.

2.1 MICROSOFT SHAREPOINT

Microsoft SharePoint is an online-based system that allows users to share documents, reports, tasks, calendars, contacts, and other information. It can be used as a virtual workspace where different members of a group can upload and modify documents while SharePoint keeps a record of every previous document version, with documentation of who changed the last version and the specific date it was modified. Other tools, such as the calendar and tasks, allow for group members to keep track of important meetings and project progress. These sites can be easily created, usually having individual sites for each project or important meeting. Different access capabilities can be granted or restricted to specific members so that only those involved in the project can actually modify data.

2.1.1 MICROSOFT SHAREPOINT DASHBOARD

SharePoint has a powerful tool known as Dashboard Designer, which can be used to create SharePoint Dashboards. A SharePoint Dashboard is an online site where data from different sources is assembled and summarised into an easy-to-read display. These displays usually include individual tools, known as widgets (see section 2.2.1: Dashboard Widgets), which the user can customise to fit their needs.

A useful dashboard is one where the user can quickly find a lot of important and relevant information in a short space. For the design to be functional, the dashboard must be catered towards a specific type of user and a specific type of data. The dashboard is a powerful

analytical tool which managers can use to track the performance of a specific team or department. This performance is usually evaluated by different Key Performance Indicators (KPIs). This information can be accessed in real-time from any computer screen to help with decision making.

A dashboard typically includes several menu items that allow the user to toggle between different displays. Each display has synthesised data on different charts, graphs and text items. Usually the data is accompanied by indicators that show a red, amber or green flag if an item needs attention. An example of a dashboard can be seen in Figure 1 below.

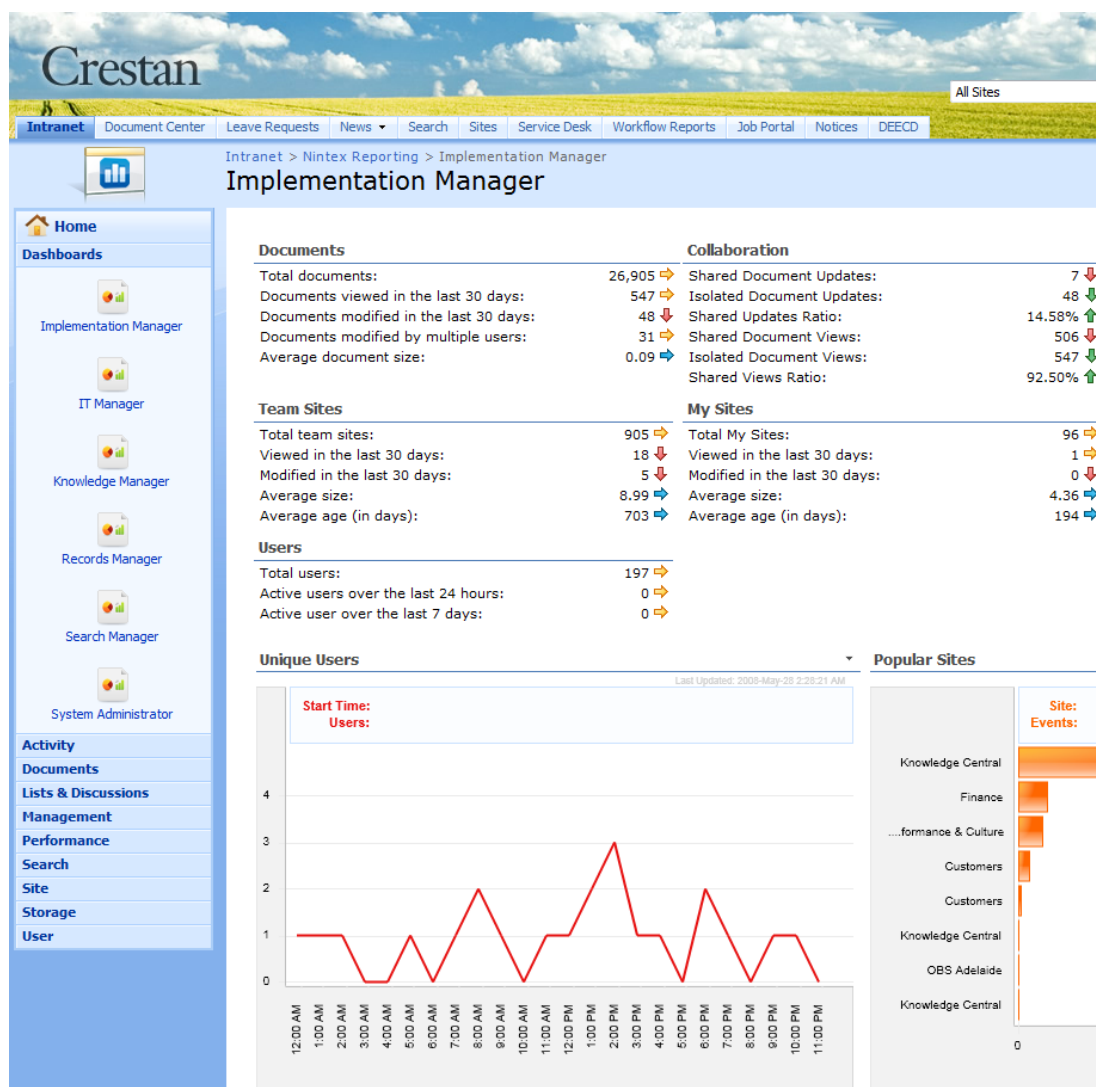


Figure 1: Dashboard Example (Nel, 2009)

2.2 DASHBOARD COMPONENTS

The development of a performance dashboard concept includes several different components. The vast amount of information included in a dashboard covers a wide variety of data from different categories. These dashboard categories can cover areas such as Recruitment, Projects, Budget, batch times, approvals, and so on. Depending on the department or area, the dashboard categories can range in both number and type. Once the categories have been defined, dashboard widgets can be created to display the KPIs of the different categories.

2.2.1 DASHBOARD WIDGETS

A dashboard widget is a small, self-contained unit which can be dragged in, out, and around the dashboard. The widget contains a visual, such as a graph or list, which summarises data for a specific category detail. One category can contain many widget details, which are the individual KPIs encompassed in the category. Many widgets can be created for each category and all widgets can be stored in a widget library. The widget library allows for unused widgets to be stored and accessed. Users can decide which widgets they want to see on their dashboard and can customise timescales and information displayed. The main dashboard user home page is where the user can pull together their desired widgets to see an overview of information all in one key location.

2.2.2 DASHBOARD LAYOUT

Once the widgets have been created, the dashboard can be compiled into a uniform layout. Dashboard layouts can have many different possible designs to give a uniform look and feel depending on user needs. However, most layouts tend to stick to a certain theme so all elements complement each other and are visually appealing. While dashboard layouts can be modified by moving the individual widgets around the home page, the overall layout will have a default setup.

2.3 DATA SYSTEMS AND SOURCES

BNP Paribas' Dashboard Vision uses different types of data from various sources and combines them all together into one display. This data will need to be drawn from sources like Excel, SQL Server, Oracle, Jira, Websites, and more. Most of these systems are Database Management Systems (DBMS) that record business information. The dashboard can draw information from any of these sources of data to present a summary of information and discover any anomalies. Once an anomaly is discovered, the dashboard should raise a red or amber flag signalling that attention is needed. A glossary of all the data systems and sources used to create the dashboard can be found in Appendix H. For the Performance Dashboard Concept, we focused on Recruitment, Projects, and Budget; the following are descriptions of the data sources used for these three categories.

2.3.1 RECRUITMENT DATA SOURCES

The primary data source used to manage recruitment in the Fixed Income IT Deal Capture department is the "WSTP" recruitment spreadsheet (which is named after Wells Powell's initials). This spreadsheet is accessible by all recruiting managers within the department and is frequently updated. Alan Cable, one of our liaisons, uses this spreadsheet to monitor new employees within the department. Information in this spreadsheet needs to match with the information listed on Yetti, a tool used to manage all IT staff in the organisation.

The WSTP spreadsheet is the primary source of data regarding new joiners and TBDs. A TBD is a staff position that is To Be Defined, meaning the new joiner has not yet started. TBDs are divided into two categories: unnamed, which are open positions without a name of a new joiner that will most likely fill the position, and named, which are positions that have a new joiner that has accepted an offer and has a start date but has not had their first day yet. This spreadsheet was implemented in the Fixed Income IT Deal Capture department within the last year and has recently been implemented in other departments.

The WSTP spreadsheet includes a vast amount of information on new joiners and TBDs. Wells Powell is in charge of recruitment for the Fixed Income IT Deal Capture on a global scale,

hence the WSTP spreadsheet includes positions available in many locations. For each position, there is a listing of the status of the position, the manager's name, hire's name, type of hire, rationale, the team the hire will be a part of, the role they will hold, the phasing start date for the position, and the actual start date of the position. Additionally, the spreadsheet lists their ODEON (see Appendix H) reference number, their HR job requisition (reference) number, and whether or not they are included in Yetti. A more detailed description of the WSTP terminology can be found in Appendix G.

Additionally, a Financial Report is used to see the forecasted staff for the year. The budget forecasts are completed in August for the following calendar year and records how many staff members are included in the budget. Recruitment is based on the budgeted amount, and it is ideal to spend the full budget allotted. The staff budget forecast is recalculated in May and in September based on the actuals up until that point and the remaining budget (in man years) that can be spent by the end of the year. This information can be used to compare the actual staff to the targeted staff for any given month.

2.3.2 PROJECTS DATA SOURCES

Most of the information regarding projects comes from the Project Office. The Project Office compiles a monthly dashboard known as the PPME dashboard, or Project Portfolio Management & Execution Dashboard. This dashboard is approximately 18 pages and is a compiled summary of information at the execution manager's level. The information shows graphs and tables of monthly summaries as well as the trends over the last 6 months for the different departments of Fixed Income IT. Wells is able to use this dashboard to see how he stands compared to other execution managers, however what he is looking for on his own dashboard is a breakdown of the next level of information so he can see how his programme managers are performing.

Much of the information included in the PPME dashboard comes from monthly evaluations filled out by each project manager. These evaluations are submitted using Project Register (see Appendix H). The Project Office runs queries to compile information from the

evaluations and create extracts of data that are compiled into numerous spreadsheets. For the purpose of this project, there are five spreadsheets that contain useable data: Eval Report, Consolidated Data, Data Quality Raw Data, Documentation Raw Data, and Effort Quality Raw Data.

2.3.2.1 Eval Report

The Eval Report can be used to find the overall, cost, and time status for each project and programme. The overall status is determined by the project manager's discretion based on how he or she feels the project is performing. Both cost and time statuses are determined based on project performance compared to original forecasts. The time and cost statuses are calculated by finding the percentage variance of current forecast duration and cost compared to original estimates. These statuses can be displayed as red, amber, or green to show the extent to which the project or programme is on target.

2.3.2.2 Consolidated Data

The Consolidated Data spreadsheet can be used to find the evaluation status of all projects and programmes for the current calendar year. Evaluations need to be submitted within the last 5 days of the month to an approver. Once submitted, these evaluations can either be approved or rejected by the approver and the status will be set accordingly. If the approver does not approve or reject the evaluation, the status becomes "No Action". If the project manager is absent during those 5 days, they need to find someone to submit their evaluation.

2.3.2.3 Data Quality Raw Data

Data Quality Raw Data can be used to see the amount of data quality issues for each project and programme. Depending on the type of activity (projects, maintenance, or umbrellas), there are a number of various potential data quality issues to check. If the project is CMMI, or Capability Maturity Model Integration¹, then projects have 9 possible data quality checks, maintenance has 7, and umbrella groupings have 6. If the project is non-CMMI, the

¹ CMMI projects are run under a project management regime that has been independently certified by an external body.

projects have 11 possible data quality checks, maintenance has 7, and umbrella groupings have 8.

2.3.2.4 *Documentation Raw Data*

Documentation Raw Data shows the submitted and missing documents for all projects. Once a project has reached a certain phase, certain documentation needs to be submitted. The phases a project can be (in order) are proposal, definition, design, construction, transition and operations. If a project is CMMI, then the possible documentation include Estimate, Proposal, Governance Assessment, Deliverable management Plan, User Requirements, Functional Specification, and Closure report. If a project is non-CMMI, then the possible documentation include PID (Project Initiation Document), Specification, Plan, and PGA (Project Governance Assessment).

2.3.2.5 *Effort Quality Raw Data*

Effort Quality Raw Data shows the effort quality issues for all projects and programmes. For all activity types, there are a total of 5 possible effort quality issues. The activity types are maintenance, envelopes, and projects. Possible effort quality issues are in progress projects without actuals or forecast, in progress projects without additional forecast, not started projects with actuals, envelopes and umbrellas with actuals, and completed projects with planned forecast. Effort quality issues typically occur because team managers make errors in forecasting or staff book effort to the wrong activities.

2.3.3 BUDGET DATA SOURCES

The budget information is tracked in a system called Badger (see Appendix H). This system records the budget in man years and users can see budget levels and forecasts for all projects. Additionally, there are two compiled data sources from ITO (Information Technology Operations): the resource report and the project report. The ITO resource report is used to determine the TBD% of forecast. This shows how much of the forecasted budget depends on TBDs in comparison to how much of the budget is made up of current staff.

The ITO project report shows the full year forecast (fyf) for each project, (which is the currently forecasted amount of man years effort on the activity for the current year), and the revised budget, which is the officially approved budget for the activity. The FYFvsRev difference shows the difference between the current forecast and the revised budget. The run rate is determined by taking the actuals, which are the total number of man years spent up to date, then dividing them by the number of months passed and multiplying by twelve. This predicts how much a project will spend in man years by the end of the year based on the amount of spending thus far. Additionally, the project report shows a breakdown of how many permanent employees, consultants, and contractors there are for each project.

3. METHODOLOGY

Our goal for this project was to create a Performance Dashboard Concept that will serve as a blueprint for the future development of a dashboard for senior managers. Once developed, the dashboard will provide summarised information of the department's performance, including categories such as Recruitment, Projects, Budget and so on.

Our main approach included identifying Mr Powell's vision of the dashboard, learning where the data is stored in the company's systems, and deciding how such data should be displayed in the most useful way. With this information, dashboard widgets, including specific KPIs, were developed and improved through a continuous evaluation and adjustment process. To achieve this goal, we developed the following objectives:

1. Understand the user needs of the dashboard and preferred information display type.
2. Generate a structured and descriptive scheme of the dashboard widgets.
3. Develop Excel-based widgets based mainly on real data.
4. Create a potential dashboard layout.

This chapter describes the approach we used to complete this project and achieve these four objectives.

3.1 UNDERSTANDING USER NEEDS AND PREFERRED INFORMATION DISPLAY TYPE

To gain a better understanding of the overall vision of the dashboard, we spent our first week meeting with Mr Powell and Mr Cable to discuss all aspects that should be considered and included in our proposed dashboard layout. Before our arrival, a list was created of the different category areas that could potentially be included in the dashboard. These categories include Recruitment, Projects, Budget, Absences, Approvals, Batch Times, Audit Points, Technical Alerts, and Incidents. For each of these categories, additional information was provided explaining the specific data Mr Powell would like to see on the dashboard, the sources where data could be found, the contacts for those data sources, and any additional comments. Mr Powell prioritised Recruitment, Budget, and Projects as the categories to develop first.

These initial meetings also included Ken Iino, a consultant who has been working on developing an internal website for the Fixed Income IT department since December 2009. Mr Iino was an important contact throughout the course of the project and helped us to understand how SharePoint could be used to create the widgets for the final dashboard. Once we had a better understanding of Mr Powell's needs and what information should be displayed, we were able to start compiling ideas into a dashboard scheme.

3.2 GENERATING A DASHBOARD WIDGET SCHEME

After compiling a list of requirements and categories, we started generating dashboard schemes for each category. Each scheme includes all widgets and their details for a particular category. These details, which were used as the column headings of the category scheme, were as follows:

Widget:	States the widget name.
Detail Description:	Explains the main function of the widget.
Display Type:	Graph, table, list, etc.
Red/Amber/Green Def.:	Shows the values that determine the RAG status.
View Options:	Includes the different filter options that the user may select to view a specific set of the data.
Default Time Scale:	Used for each widget.
Time Scale Options:	The different time options that the user may select.
Source of Data:	File and/or office where the data was obtained.
Contact:	Person who provided or controls the data source.
Update Frequency:	Rate at which data should be updated on the dashboard.
Comments:	Detailed explanation on what the widget shows and its uses.
Widget Notes:	Explanation of how widgets were created, including pivot table filters.

This template was then filled in according to the information gathered from the initial meetings with Mr Powell. We identified the most important KPIs, named them, grouped them, and described them according to the scheme column labels. This method was followed for the Recruitment, Projects and Budget categories. The finalised schemes served as a guideline to develop the Excel-based widgets.

3.3 DEVELOPING EXCEL-BASED WIDGETS

Excel was the main tool used to analyse the data and develop the widgets. The first step was to obtain data samples that we could use to create graphs and tables. Most of this data was extracted from company database systems in the form of Excel spreadsheets. We then used filters and pivot tables on these data sets to isolate the necessary information. The data obtained from filtering was then presented as different display types, primarily graphs and tables, which made up specific widgets from the scheme.

Mr Cable provided close guidance and advice throughout the development of all of the widgets. After developing the first drafts of the widgets for Recruitment category, we presented them to Mr Powell for review. His comments were taken into account and modifications were made to create the second draft of the widgets. We constantly updated the graphs and tables based on feedback to ensure they display the most useful information, removing unnecessary widgets and synthesizing others.

3.4 CREATING A POTENTIAL DASHBOARD LAYOUT

As part of the dashboard blueprint, we sketched possible screen layouts to have a visualisation of how the dashboard could look. Ideas were gathered from the current dashboards used at BNP Paribas and from other online examples. Different sketches were drawn, analysed, and compiled into one. Additional input was obtained from the meetings with Mr Powell where we asked him to sketch his own ideas. Two final layout screenshots of the dashboard were created using the actual widgets developed; the first one displayed what Mr Powell would see on his dashboard and the second one displayed what a lower level manager would see.

3.5 SUMMARY

The creation of the dashboard concept was completed while keeping in mind how the deliverable to BNP Paribas could be used in the future development of the dashboard. Mr Powell's dashboard vision was attained by understanding the needs of the user, identifying the preferred data display type, generating category widget schemes, developing the widget graphs and creating a sample dashboard layout. The following is a chart summarizing the main project accomplishments over the course of 8 weeks.

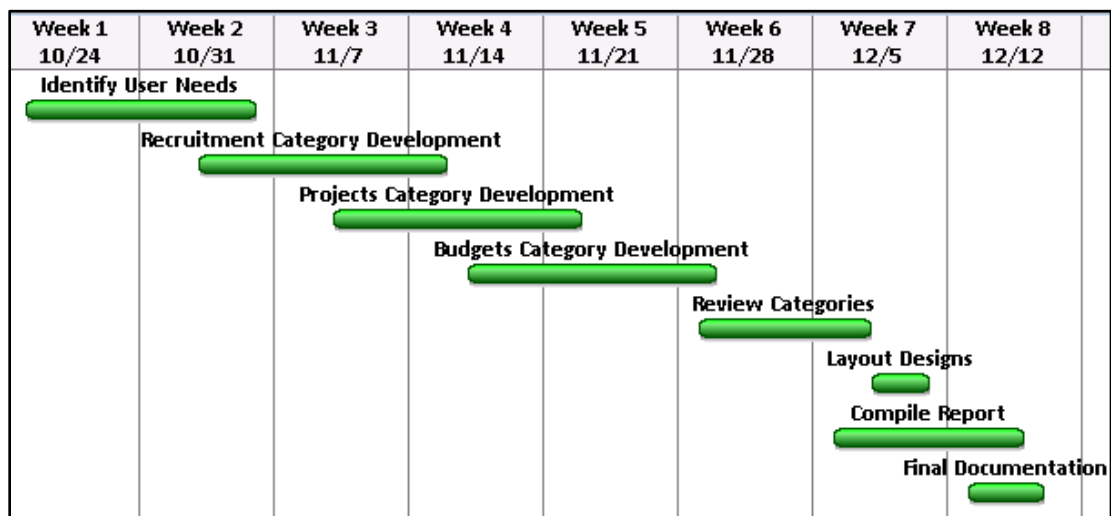


Figure 2: Timeline of Project Completion

4. RESULTS AND ANALYSIS

The methods previously described allowed us to generate the dashboard vision for three categories: Recruitment, Projects and Budget. A scheme was created for each of these categories which include a written detailed description of each widget. This scheme was then used as a guideline to develop the widgets. Finally, the most important data from the different widgets was summarised and put together into a category home page view. This section includes the scheme, graphs and home page for each of the three categories developed (See Figure 3: Category Details).



Figure 3: Category Details

4.1 RECRUITMENT CATEGORY

Data regarding recruitment in the Fixed Income IT Department is managed using two systems; Yetti and the WSTP Recruitment Spreadsheet. Currently, there is no way for Mr Powell to review the hiring performance other than looking at the raw data in the WSTP spreadsheet. By including the Recruitment category in the dashboard, Mr Powell will be able to review the current hiring progress and easily identify issues. The widgets developed for the Recruitment

category help identify upcoming unsecure TBDs, review past hires, identify quality alerts, and compare the actual start delay average.

4.1.1 SCHEME

After analysing the needs of Mr Powell and the data provided from the WSTP spreadsheet, the following widgets were created. For more details, the Recruitment and Recruitment Home Page Schemes can be found in Appendix B and Appendix C respectively.

Widget:	Description:
Unsecure TBDs	Call for attention if TBDs are unnamed.
Unsecure TBDs by Manager	Call for attention if TBDs are unnamed.
New Joiner's Checklist	Shows a list of new joiners and their checklist in order of start date.
WSTP Quality Alerts	List of all quality issues and their description from the WSTP.
Staff CF Target	Comparison of current staff vs. forecasted staff (May, September and current forecast)
Start Delay Average	Shows the average recruitment delay by recruiting managers. Recruitment delay is the difference between the original estimated start date and actual start date.
Start Delay Average Trend	Shows the start delay average trend for the entire department in the last year..
Recruitment Heat Map	Summarises data from most of the widgets into a condensed form. Displays trends when possible.
New Joiners/Missing Equipment	Shows the number of upcoming new joiners and highlights those with missing equipment for work.
Recruitment Issue List	List of items that need attention from the recruitment widgets and Recruitment Heat Map.

4.1.2 WIDGETS

4.1.2.1 Unsecure TBDs

Figure 4 displays the number of unsecure TBDs in the previous, current and next three months. Unsecure TBDs include positions that have an open, approved, or interviewing status (see Appendix I for explanations of terms). Having an unsecure TBD with a phasing start date in the past is a quality issue since a position should have been filled or the phasing start date is no longer realistic; however it is still shown in this widget for evaluation purposes. The current month unsecure TBDs are likely not to be filled, yet it is important to highlight this information to show the level of recruitment under-performance. Finally, the future unsecure TBDs are shown to keep track of the future positions that need to be filled.

Colour is used to differentiate between the different unsecure TBD statuses. Open TBDs are the farthest away from becoming secure; hence they are shown in red. Approved TBDs are a little closer to becoming secure; hence they are shown in amber. Interviewing TBDs are the closest to becoming secure; hence they are shown in yellow. This same colour scheme is used in Figure 5, where the number of unsecure TBDs by manager is shown. The tally for Figure 5 includes only those TBDs in the upcoming 3 months. The objective of this widget is to highlight managers who have a large number of upcoming unnamed TBDs.

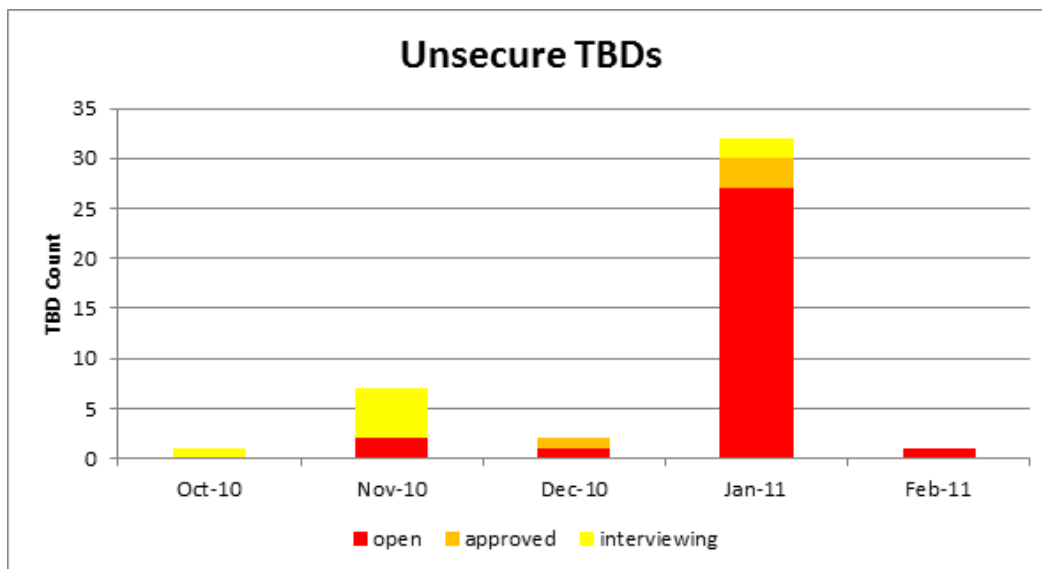


Figure 4: Unsecure TBDs

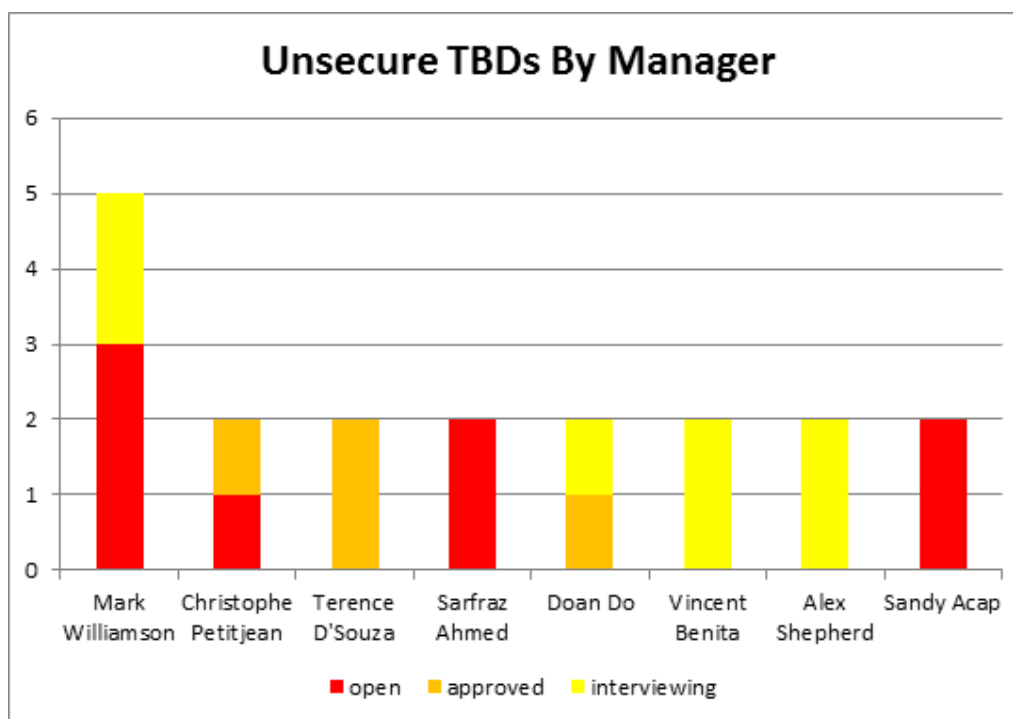


Figure 5: Unsecure TBDs by Manager

4.1.2.2 New Joiners Checklist

The New Joiners Checklist (Figure 6) shows a list of upcoming new joiners and calls for attention if any new joiner does not have the necessary equipment ready to start their first day of work. The checklist includes a list of names and TBDs with a starting date in the current and following 4 weeks. They are sorted by starting date and identified by recruiting manager and the team they belong to. On the right is a checklist of items that each new joiner needs to start working. The data displayed is mock-up since it is not currently being recorded. A possible method of recording this data would be to include additional columns in the WSTP spreadsheet.

Actual start	New NPR Name	Manager	Team	Phone	BlackBerry	Computer	Laptop	New Joiner Form	Desk
11/1/2010	Justin Tharthong	Mark Williamson	FI IT Deal Capture FX Dev Rev/Evolution	✓	✓	✓	✓	✓	✓
	Richard Bell	Doan Do	FI IT Deal Capture Architecture FX	✓	✓	✓	✓	✓	✓
	Steven Young	Doan Do	FI IT Deal Capture Architecture FX	✓	✓	✓	✓	✓	✓
	TBD WP267 Oskar Ivinger	Mark Williamson	FI IT Deal Capture FX Dev Orders and STP	✓	✓	✓	✓	✓	✓
11/4/2010	Sarah Kinsley	Mark Williamson	FI IT Deal Capture FX Dev Reporting & MIS	✓	✓	✓	✓	✓	✓
11/29/2010	TBD WP118 Russell Duggard	Mark Williamson	FI IT Deal Capture FX Dev Rev/Evolution	✓	✓	✓	✓	✓	✓
	TBD WP185 Daniel May	Mark Williamson	Dev - FX eTrader 2	✓	✓	✓	✓	✓	✓
	TBD WP215 Iain Wildman	Doan Do	FI IT Deal Capture FX Dev FXT	✓	✓	✓	✓	✓	✓
	TBD WP319 Michael Brock	Doan Do	FI IT Deal Capture FX Hedging	✓	✓	✓	✓	✓	✓
12/1/2010	TBD WP130 Chris Lattimore	Christophe Petitjean	FI IT Deal Capture Support FX	✓	✓	✓	✓	✓	✓
	TBD WP202 Ying Shi	Vincent Benita	FI IT Deal Capture B&R	✓	✓	✓	✓	✓	✓
12/6/2010	TBD WP188 Gaurav Soni	Sarfraz Ahmed	FI IT Deal Capture Regression IRG	✓	✓	✓	✓	✓	✓

Figure 6: New Joiners Checklist

4.1.2.3 WSTP Quality Alerts

The Quality Alerts list calls for attention if there are any inputs in the WSTP spreadsheet with erroneous data. We developed a list of possible issues that could be found in the spreadsheet. These issues were primarily comprised of illogical situations such as having an actual start date in the past but the status is not listed as “started”. Figure 7 shows an extract of the actual list showing only a few of the possible issues identified in the WSTP spreadsheet. For a full listing of possible data issues, please see Appendix G.

New NPR Name	Recruiting Manager	Filled or Started Status but No Start Date	Accepted, Filled or Started Status but Missing Name	Status is not Accepted, Filled or Started and Hires Name is filled	Replacement Status with no Replacee Leave Date	Actual Start Date in the Past and Still TBD	Actual Start Date but No Hire Name	No Phasing Start Date	CC is blank
TBD WP194 New	Alex Shepherd					X	X		
TBD WP130 Chris Lattimore	Christophe Petitjean			X					
TBD WP215 Iain Wildman	Doan Do			X					
TBD WP128 Repl Ken Wai Pun Yiu	Doan Do							X	
TBD WP205 New 2012eFX	Doan Do							X	
Luigi Rondadini	Doan Do								X
TBD WP162 New 2012eFX	Mark Williamson	X							
TBD WP230 New 2012eFX	Mark Williamson		X						
TBD WP098 Mouna Khetab	Mark Williamson			X					
TBD WP185 Daniel May	Mark Williamson			X					
TBD WP229 Huw Roberts	Mark Williamson			X					

Figure 7: WSTP Quality Alerts

4.1.2.4 Staff cf Target

The Staff cf Target widget shows hiring accuracy and allows the user to see how prepared the department is to match the forecast in upcoming months. The three lines represent the staff count based on the May, September and Current forecasts and can be used for comparison. For months after October, there are bar graphs representing the TBDs that should be joining in those months broken down into named and unnamed TBDs. Figure 8 displays the data for the entire department, but this graph has the option to view the forecast for specific locations or rationale.

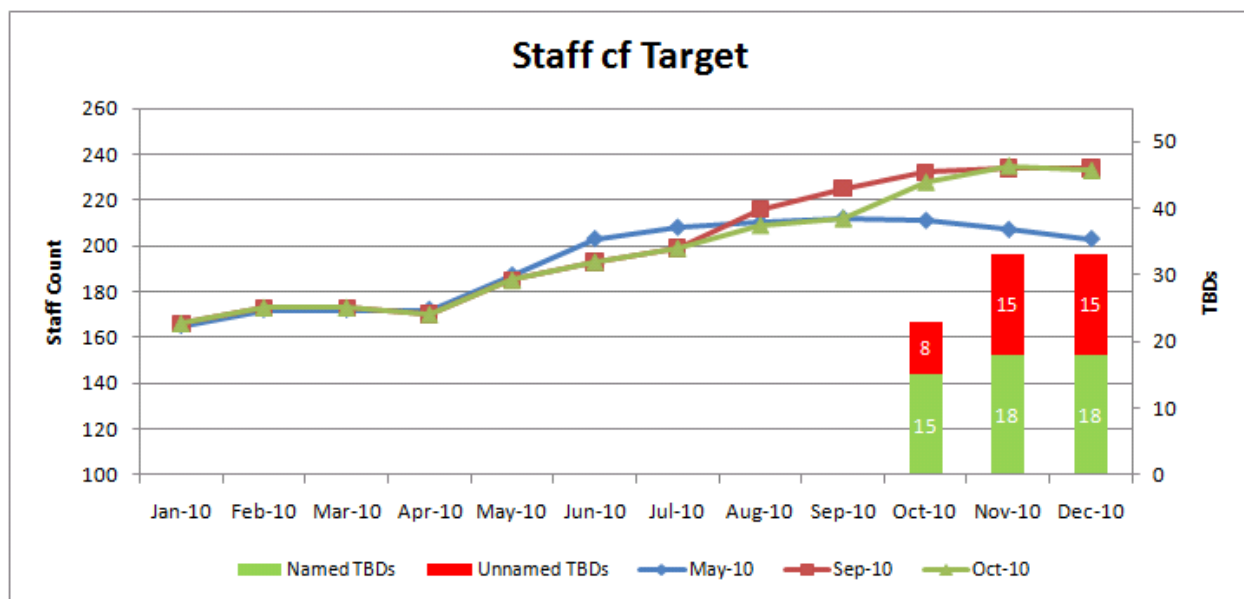


Figure 8: Staff cf Target

4.1.2.5 Actual Start Delay

The Start Delay Average widget (Figure 9) compares the difference between the original phasing start date of a position and the actual start date of the employee that filled the position. The difference between these two dates is the actual start delay, and an average of these differences is calculated for each recruiting manager. The widget only includes TBDs that have an Actual Start Date within the previous six months. The Start Delay Average Trends widget (Figure 10) shows the start delay average for the past 6 months for the entire department. The graph shows how this year's start delay average trend is trending towards zero, which means recruiting managers are more accurately forecasting hirings.

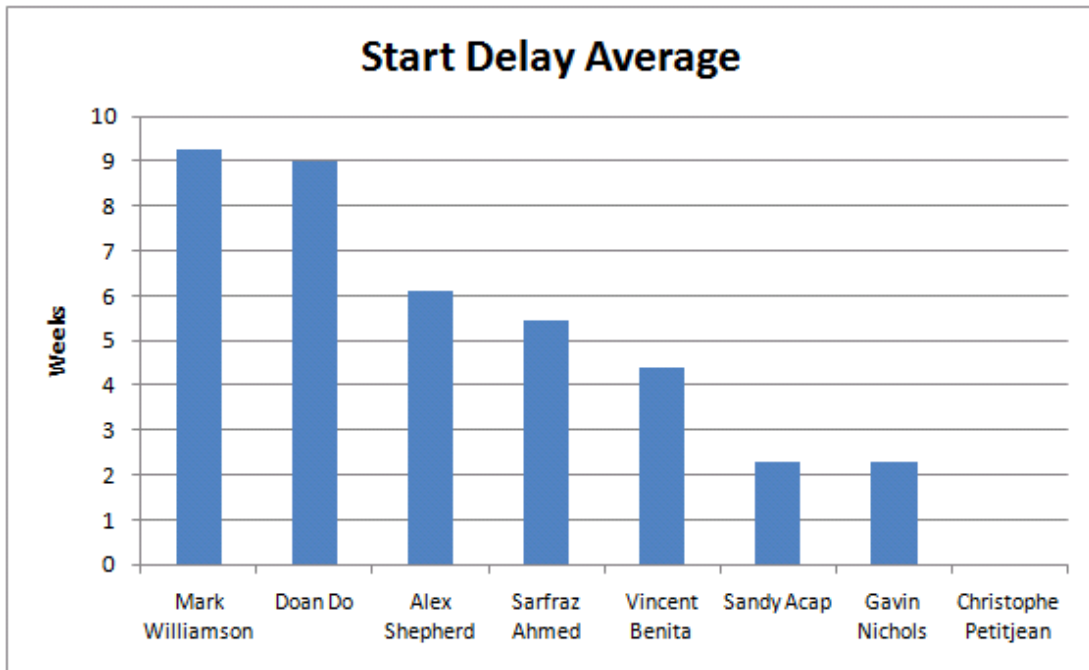


Figure 9: Start Delay Average

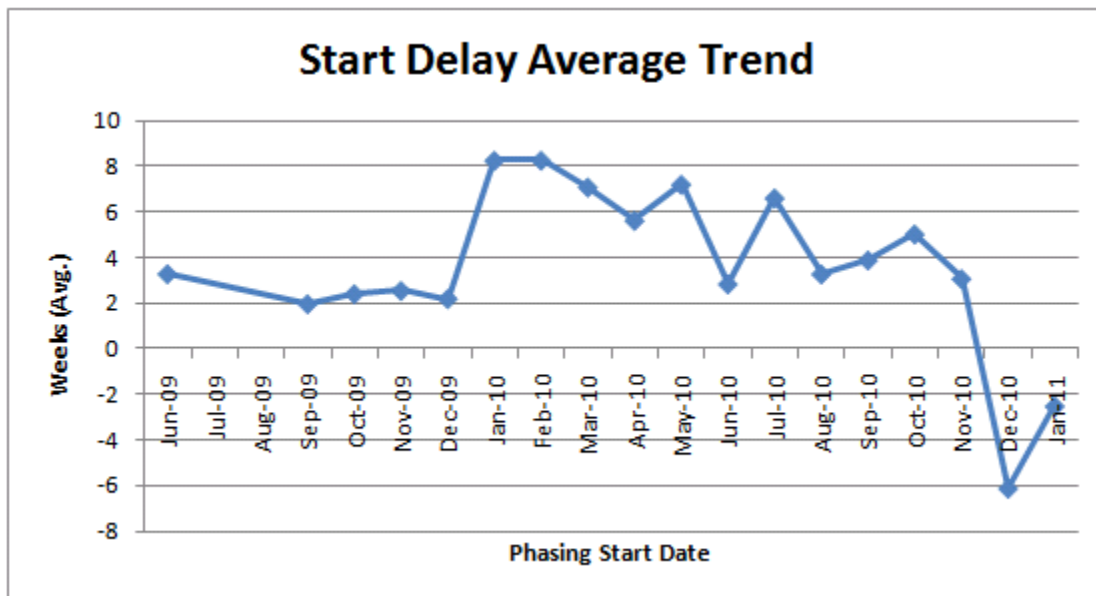


Figure 10: Start Delay Average Trend

4.1.3 HOME PAGE

The Recruitment Home Page consists of three widgets that would be the most useful for a manager to use on a daily basis. These widgets are the Recruitment Heat Map, New Joiners/Missing Equipment, and the Recruitment Issue List. The home page widgets provide a summarised view of the information found in the Recruitment widgets.

4.1.3.1 Recruitment Heat Map

The most important user need we identified was to generate a dashboard view that displayed as much information as possible. The Recruitment Heat Map summarises the most important KPIs from the different widgets (see Figure 11). Displaying trends was also manifested as a user need, and this was achieved by including three numbers in each cell; the top / largest number represents the current month and the two smaller numbers represent the two preceding months (or occasionally looking forward if recruitment is displayed). RAG colour coding is used throughout the Heat Map, and the specific values that determine if a field is Red, amber or green are explained in a comment that pops up when scrolling over the column headings in Excel. This comment also includes the filters and time frame used to gather the data out of the WSTP spreadsheet. To find out more information for red or amber items, a comment appears when the user clicks on the red or amber cell that shows details about the TBDs that have issues.

Recruiting Manager	Unsecured TBDs (Current,M+1,M+2)	Secured Hire (Current,M-1,M-2,)	Quality Alerts (WSTP)	Actual Start Delay Average (Weeks)
Alan Cable	0 0 0	0 0 0		
Alex Shepherd	2 0 0	0 0 2	2	6
Christophe Petitjean	1 1 0	0 0 1	1	0
Doan Do	1 1 0	2 2 0	4	9
Gavin Nichols	0 0 0	0 0 0		2
Mark Williamson	1 4 1	4 0 4	5	9
NY	0 0 0	0 0 0	3	
Sandy Acap	1 1 0	0 0 0		2
Sarfraz Ahmed	1 1 0	0 0 1	3	5
Terence D'Souza	1 1 0	0 0 0		
Vincent Benita	1 1 0	0 0 2	1	4
Wells Powell	0 22 0	0 0 0		
Totals:	42	18	19	
Averages:	1.17	0.50	2.71	4.6

Figure 11: Recruitment Heat Map

4.1.1.1 New Joiners / Missing Equipment

The New Joiners/Missing Equipment widget (Figure 12) allows information from the Joiners Checklist widget to be displayed as a concise view on the home page. This widget displays the total number of new joiners who are coming in the next few weeks. In addition, the widget also highlights any new joiners who are missing the necessary equipment for work. If there are any previous joiners or current and next week joiners with missing equipment, they would be highlighted in red; if new joiners in 2, 3 or 4 weeks are missing equipment, they would be highlighted in amber. If the user would like to see more details, a message would pop up when the user scrolls over a particular cell. When scrolling over the cells on the first row, a list of the names of the upcoming new joiners and their recruiting manager would show in the message. Similarly, when scrolling over the cells on the second row, a list would appear showing the new or previous joiners with missing equipment, their recruiting manager, and the missing equipment.

New Joiners/Missing Equipment				
	Previous Outstanding:	Current and Next Week:	In 2 Weeks:	In 3 - 4 Weeks:
# of Joiners		5	0	6
Missing Equipment	2	3	0	2

Figure 12: New Joiners/Missing Equipment

4.1.3.2 Recruitment Issue List

The Recruitment Issue List widget (Figure 13) displays a list of all the red and amber issues from the Recruitment Heat Map and the Recruitment widgets. This list can be filtered by Recruiting Manager, Issue Type, or by of the other column headings.

Recruiting Manager Name	Issue Type	Issue	New NPR Name
Alex Shepherd	Quality Alert	Actual Start Date in the Past and Still TBD	TBD WP194 New
Alex Shepherd	Quality Alert	Actual Start Date but No Hire Name	TBD WP194 New
Alex Shepherd	Unsecured TBD	Interviewing and Phasing Start date in less than 3 months	TBD WP316 Repl S Riemer
Alex Shepherd	Unsecured TBD	Interviewing and Phasing Start date in less than 3 months	TBD WP317 Repl A Rautenberg
Christophe Petitjean	Quality Alert	Status is not Accepted, Filled or Started and Hires Name is filled	TBD WP130 Chris Lattimore
Christophe Petitjean	Unsecured TBD	Open and Phasing Start date in less than 3 months	TBD WP232 New 2012eFX
Christophe Petitjean	Unsecured TBD	Approved and Phasing Start date in less than 3 months	TBD WP198 New 2012eFX

Figure 13: Recruitment Issue List

4.2 PROJECTS CATEGORY

Most of the details regarding projects in the organisation are stored in one system known as Project Register. Currently, the Project Office publishes a monthly report, based on the data stored in this system, known as the Project Portfolio Management and Execution (PPME) dashboard which shows the organisation performance by execution manager. Mr Powell has to sort through a significant amount of information to pull out the relevant pieces. This dashboard is published on a monthly basis which means information is often out-of-date, especially towards the end of the month when project evaluations are due. By including the Projects category in the dashboard, Mr Powell can have access to an ideally real-time project report that can highlight anything that requires attention. Some of the widgets developed for the Projects category provide information regarding Steering Committee RAG status, project status, approved evaluation percentage, and good data quality percentage.

4.2.1 SCHEME

The following is a list of widgets developed for the Projects category. For more details, the Projects and Projects Home Page Schemes can be found in Appendix D and O respectively. A consistent approach is used to show both a current snapshot and trend for each topic.

Widget:	Description:
Evaluations Submitted	Shows a stacked column graph of the percent of approved, rejected, no action, and not submitted evaluations.
Approved Evaluations Trend	Shows the trend of the percentage of evaluations submitted and approved by programme over the last 6 months.
Project Status Table	Shows a list of projects and programmes with at least one non-green overall, time or cost status.
Project Card	Drill down from the Project Status Table; shows the description of the status recorded by the project managers.
RAG Project Count	Shows which programmes have red, amber, green, and undefined projects for the current month.
Green Projects Trend	Shows a trend of the percentage of green projects by programme over the last 6 months.
Data Quality	Shows a stacked column graph of the percentage of conforming and non-conforming data by programme.
Conforming Data Quality Trend	Shows the trend of the percentage of good quality data by programme over the last 6 months.
Effort Quality	Shows a stacked column graph of the percentage of conforming and non-conforming data by programme.
Conforming Effort Quality Trend	Shows the trend of conforming effort quality by programme over the last 6 months.
Missing Documentation	Shows total possible documents to be attached broken down into attached and missing.
Attached Documents Trend	Shows the trend of the percentage of correct documents by programme over the last 6 months.
Projects Heat Map	Summarises data from most of the widgets into a condensed form. Displays trends when possible.
Projects Issue List	List of items that need attention from the projects widgets and Projects Heat Map.
Projects List	List of all projects grouped by Programme.

4.2.2 WIDGETS

4.2.2.1 Submitted Evaluations

The Submitted Evaluations Widget (Figure 14) calls for attention if projects within a programme have evaluations that were not submitted (red), have no action (amber) or were rejected (yellow). At the end of each month, the evaluation status of every project is set to red and project managers are reminded to submit their project evaluations. This evaluation status only changes after the manager submits the project evaluation. The Approved Projects Trend (Figure 15) identifies how close each programme has been to achieving 100% projects approved. The overall dotted black line allows the user to compare the different programmes to the overall average.

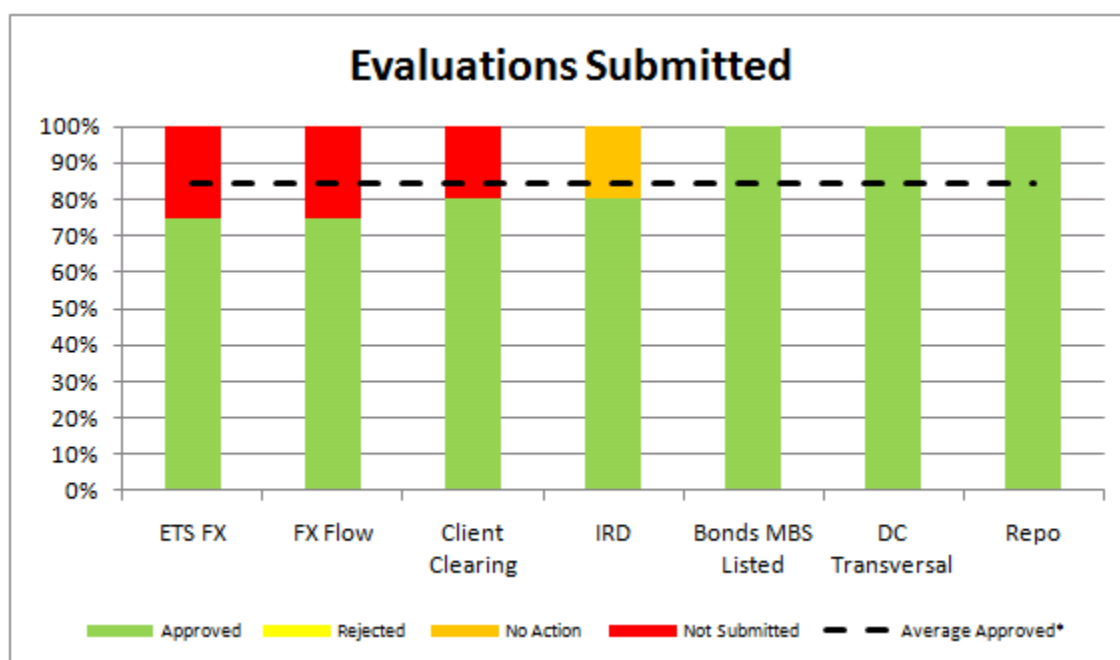


Figure 14: Evaluations Submitted

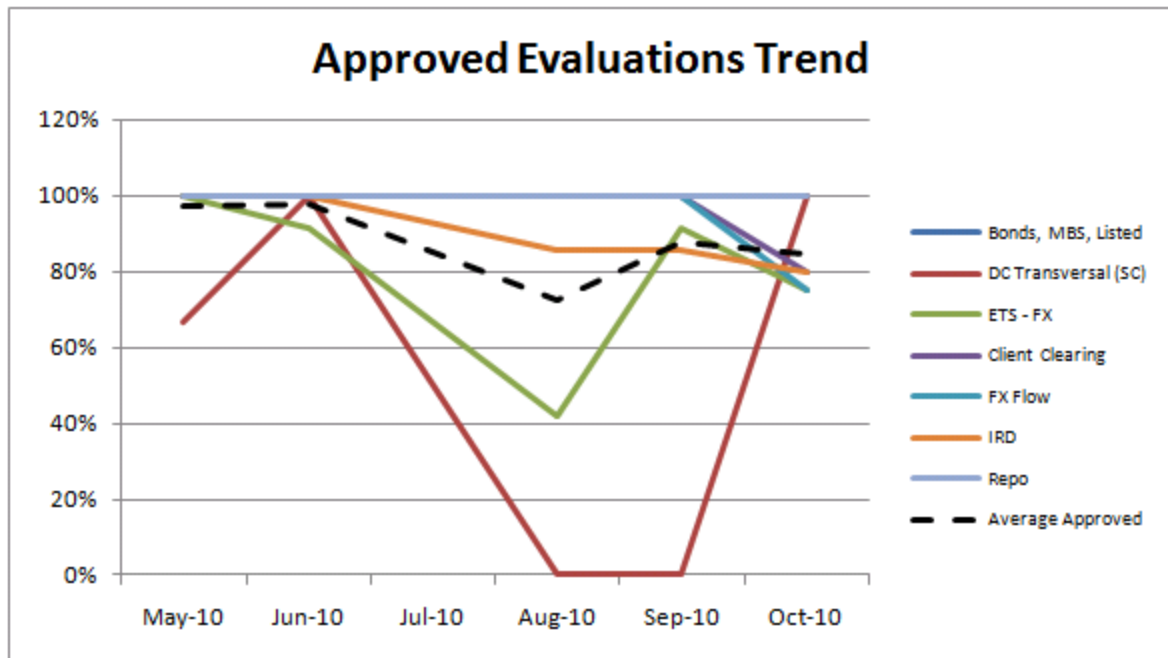


Figure 15: Approved Evaluations Trend

4.2.2.2 Project Status: Overall, Time, and Cost

The Project Status Table Widget (Figure 16) highlights projects or programmes where the overall status, time status or cost status is red, amber or undefined. Projects are grouped by programme, and those with all green statuses are hidden. For red, amber or undefined statuses, the cell includes the number of months the project has been at that status. The Project Card (Figure 17) displays a drill-down version of the Project Status Table Widget. In addition to the information displayed in the first widget, it includes a description of the status of the project. The Project Card view only displays projects for a specific programme.

Programme/Project	ID	Manager	Status (#months)		
			Overall	Time	Cost
Bonds, MBS, Listed Front to Back (SC)	11706	Olivier Magere			
Deal Capture Regression Testing for Releases - Bonds	13619	Adam D Scott			1
Deal Capture Regression Testing for Releases - Futures	13621	Adam D Scott			3
STAR small enhancement for Bonds	11905	Phil Christie			6+
TCN STAR Integration	19373	Robert Pearman		1	
FI Client Clearing (SC)	19021	Frios Manolas	2		4
Murex BO - Client Clearing	18953	Benoit Pinot		2	3
CD Client Clearing - ICE Link Workflow	19067	Simon De Berry			1
CD Client Clearing - Trade Capture	18972	Steve Judge			3
STAR - Client Clearing	18680	Audrey Moncomble		2	3
Deal Capture Transversal (SC)	12334	Alex Shepherd			
ETS - FX Flow Products Contributions & Connectivity	11598	Mark Williamson			3
FX order Management System	13653	Trevor Green	6+		
Hybrid Algo	18635	Ian L Mcdonald			5
eFX Automated Hedging	14403	Romain Murat			2
FX ETS Enhancements	12704	Sandy Acap			6+
eFX Client Distribution	14401	Alex Gvozdenovic			2
FX Flow Front to Back (SC)	11326	Quy-Doan Do	3		
FX Flow Front to Back - STP	13725	Anand Govindan	6+	6+	
Small Enhancements - FX Flow Front to Back	13430	Hugues Rolland		6+	
FX Flow Front to Back - Deal Capture	13726	Stephane Guilloux	6+	6+	6+
IRD Front to Back (SC)	2993	Tim Hobden			5
STAR OTC for LATAM onshore	15693	Daniel Wood			3
IRD FtB - Small Enhancements	13593	Tim Hobden			6+
Repo Front to Back (SC)	11775	Olivier Magere			
Small Enhancements - Repo FtB	13438	Phil Christie			6+

Figure 16: Project Status Table

Programme/Project	ID	Manager	Status (# months)					
			Overall	Overall Status Description	Time	Time Status Description	Cost	Cost Status Description
Bonds, MBS, Listed Front to Back (SC)	11706	Olivier Magere		OM 03/11/2010 Bonds: Forward bonds to ValRisk - awaiting go-live date from RCS Futures: Equity Options: AL Dorkel now Project Manager for NY				
Listed Derivatives BO - Enhancements	13781	Anne Guichard		A lot of migration done this year : infrastructure one (BP21-> CIB), 3 new Ubix version (2 already done and 1 to come) and an Oracle one (to come). Because of all those unplanned migration the project concerning the digit increase in Star number can't be d				
Deal Capture Regression Testing for Releases - Bonds	13619	Adam D Scott		Testing Star 21 in progress			1	no specific comment
Deal Capture Regression Testing for Releases - Futures	13621	Adam D Scott		Star 21 testing now started			3	Offset by an underspend on Regression Testing for Bonds (project 13619)
STAR small enhancement for Bonds	11905	Phil Christie		Development complete for emergency feed to TRACE for Agency trading - on target for Feb 20th release			6+	FYF not yet updated in Yetti - will be done before next eval
STAR small enhancement for Futures	16369	Phil Christie		(PC 22/03) Testing for equity options complete on Star side				
TCN STAR Integration	19373	Robert Pearman		Detailed Project Plan in draft. ROM and WBs due. Hi-level gameplan agreed with business. Business reviewing requirements spec.	1	Requirements spec. Business process map. Detailed Proj plan. Hi level gameplan. Branch user information collation.		

Figure 17: Project Card - Bonds, MBS, Listed

4.2.2.3 RAG Project Count

The RAG Project Count Widget (Figure 18) calls for attention when programmes have projects with an overall status other than green. Project managers are in charge of evaluating the overall status and assigning a RAG value. If the evaluation is not submitted, the RAG value from the previous month will carry on to the next one. The programmes are sorted in descending order by number of projects without green status. The Green Project Trend widget (Figure 19) identifies how close each programme has been to having all of its projects with a green overall status. This type of widget allows the user to notice issues, such as FX – Flow having three of its four projects in an amber status for the last three months.

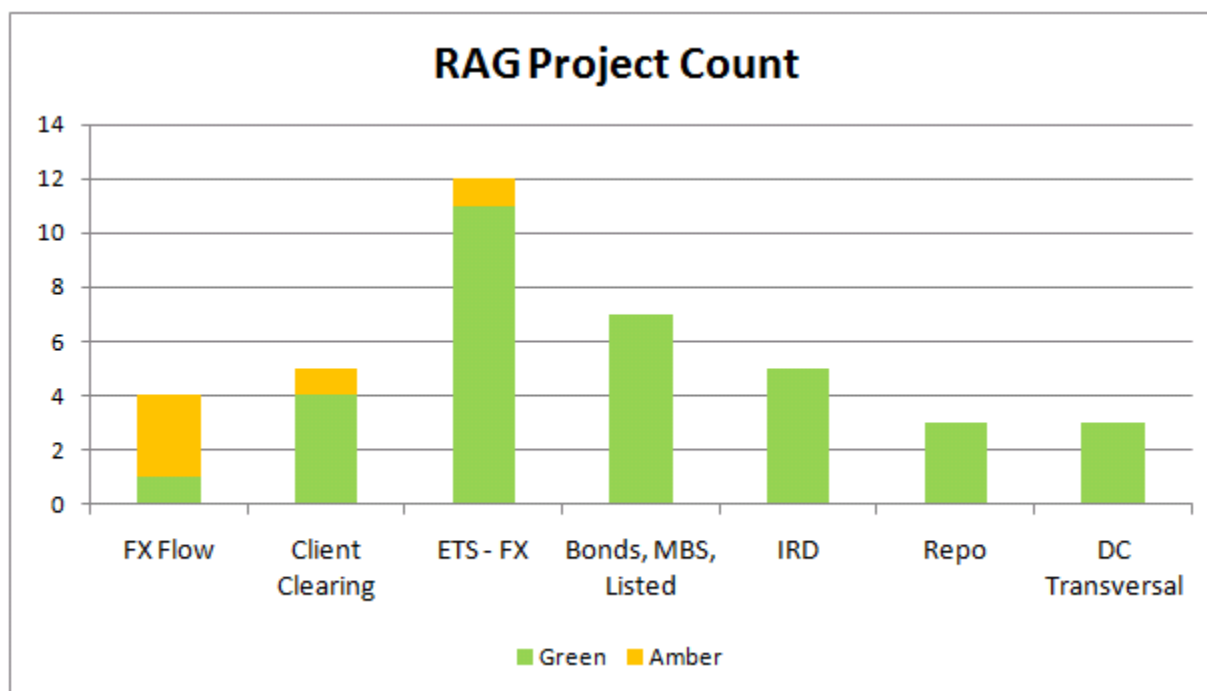


Figure 18: RAG Project Count

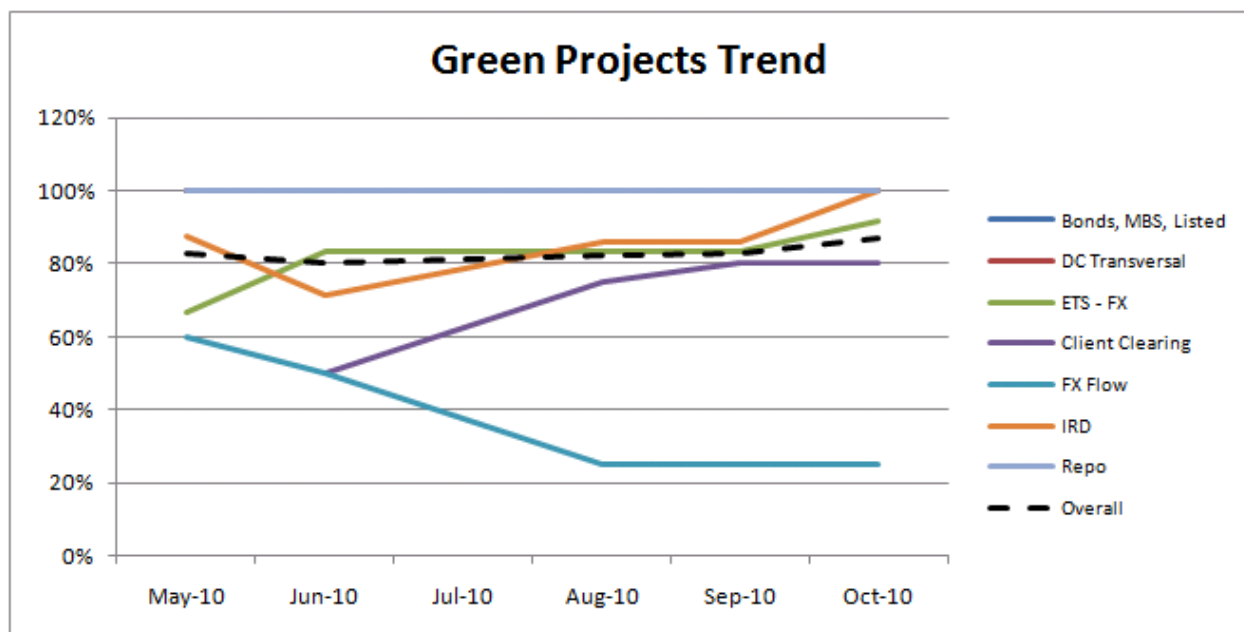


Figure 19: Green Project Trend

4.2.2.4 Data Quality and Effort Quality

The Data Quality and Effort Quality by Programme Widgets (Figure 20 and Figure 22 respectively) highlight the programmes that have projects with data or quality issues. Every project has a certain number of possible issues; the actual issues are counted and compared to the total number of possible issues to derive the percentage of non-conformances. The programmes are sorted in descending order by total number of non-conformances. The Conforming Data and Effort Quality Trend Widgets (Figure 21 and Figure 23 respectively) allow the user to visualise how close each programme has been to maintaining all of its projects with no data or effort quality issues. This widget allows the user to identify which programmes have been running below the average over recent months.

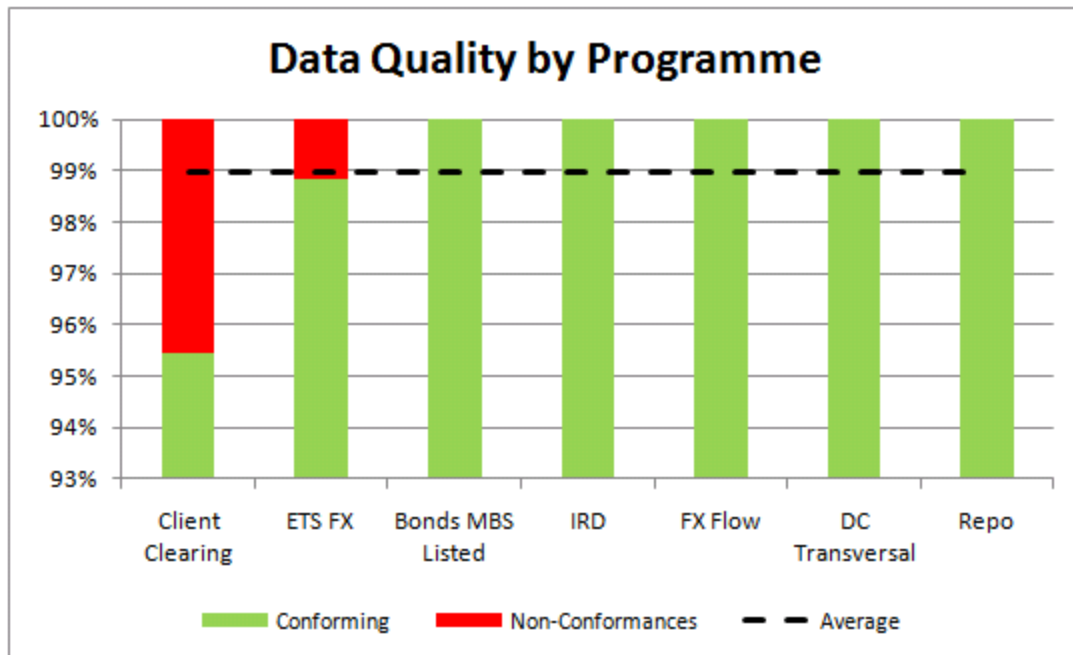


Figure 20: Data Quality by Programme

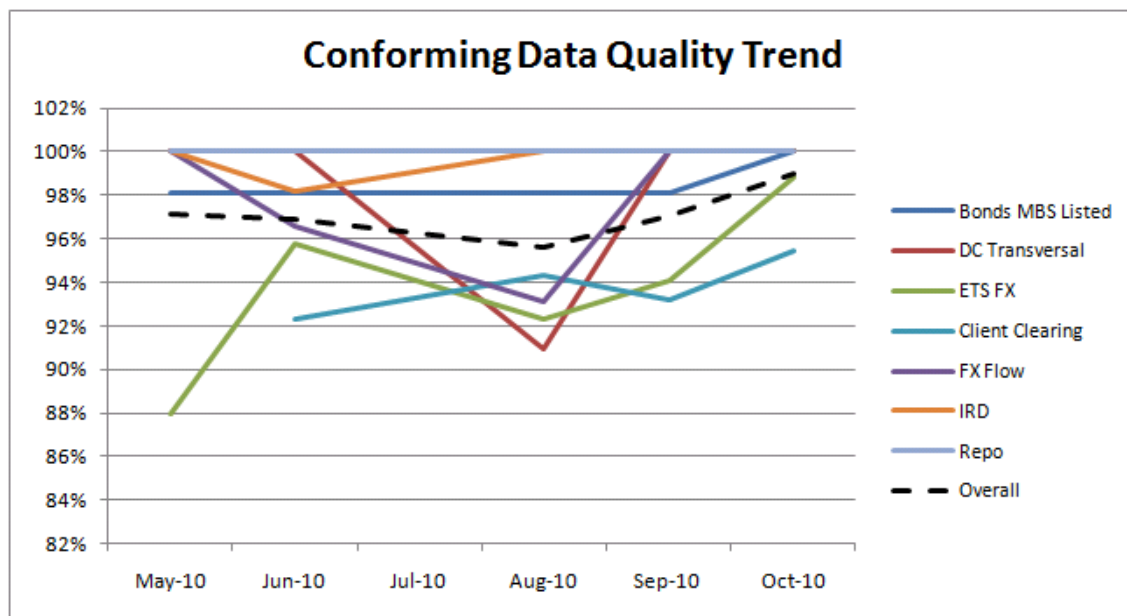


Figure 21: Conforming Data Quality Trend

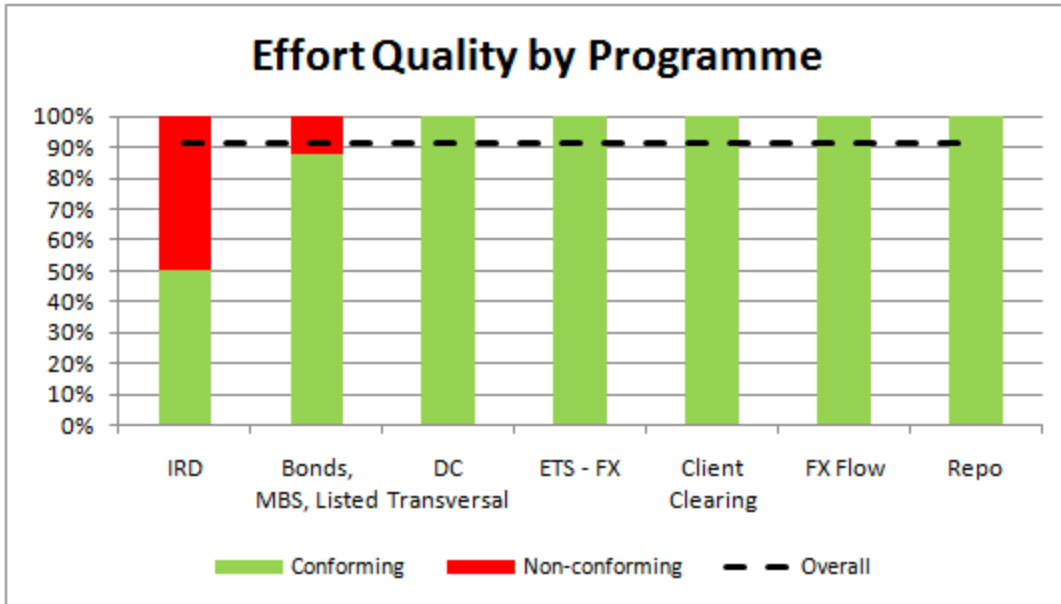


Figure 22: Effort Quality by Programme

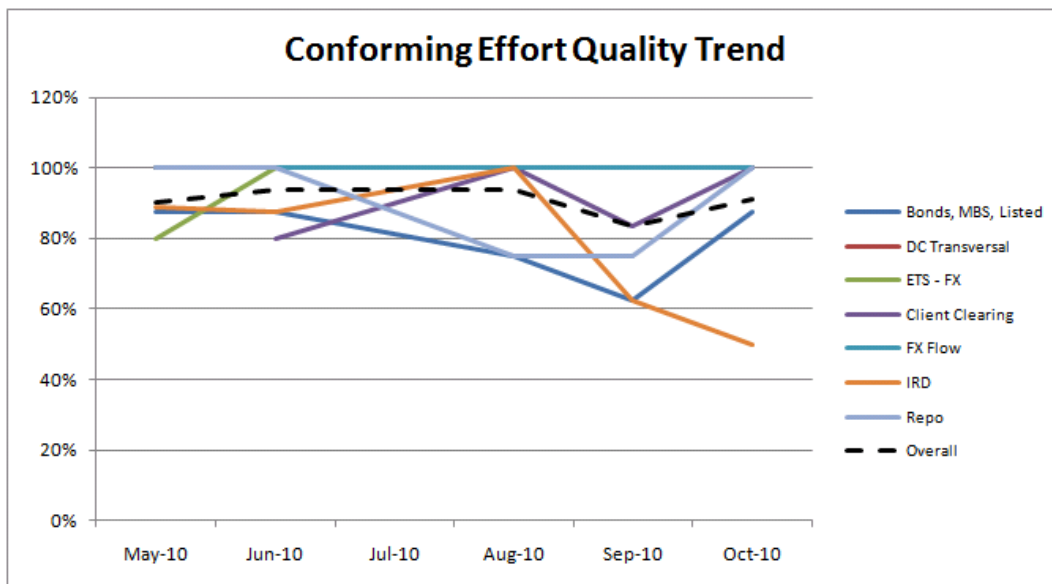


Figure 23: Conforming Effort Quality Trend

4.2.2.5 Missing Documentation

The Missing Documents by Programme Widget (Figure 24) calls attention to those programmes with projects that have not attached the required documents. Once a project reaches a certain phase, specific documentation needs to be attached. The Attached

Documents Trend Widget (Figure 25) is used to show the trend of attached documents for each programme in the last months.

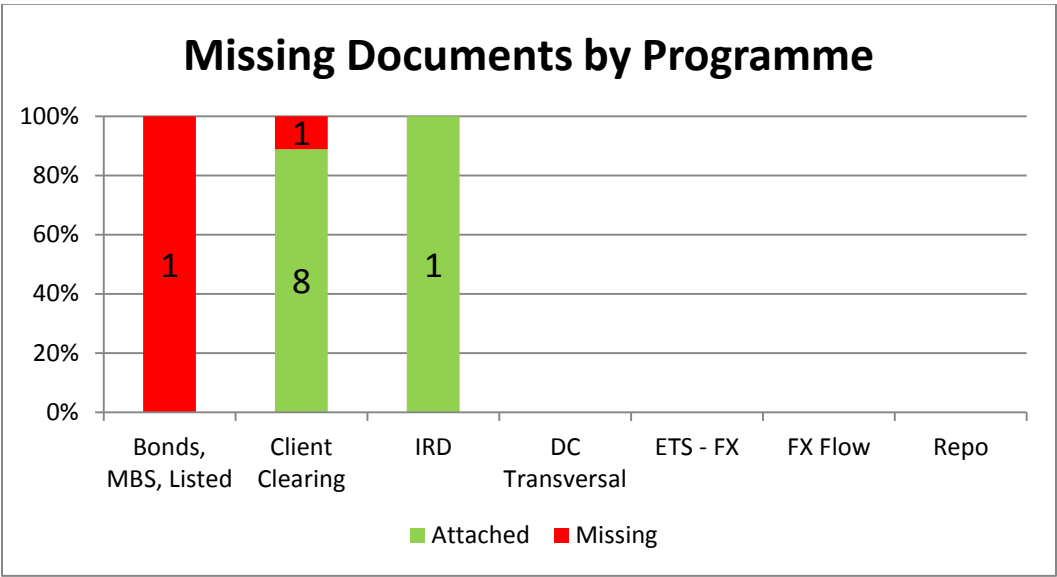


Figure 24: Missing Documents by Programme

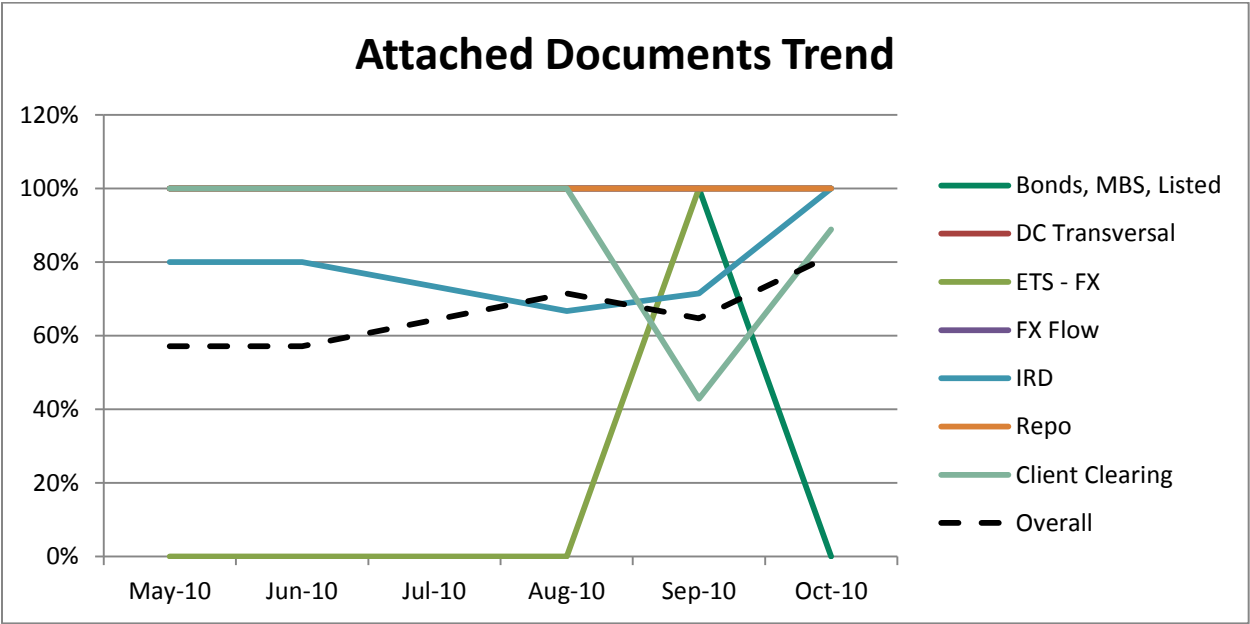


Figure 25: Attached Documents Trend

4.2.3 HOME PAGE

The Projects Home Page consists of three widgets, two of which would be useful for a manager to use on a daily basis and one of which as an appendix to look up the list of projects and their project managers. These widgets are the Projects Heat Map, Projects Issue List, and the Projects List. The home page widgets provide a summarised view of the information found in the Projects widgets.

4.2.3.1 Projects Heat Map

The Projects Heat Map (Figure 26) includes the data identified by Mr Powell as the most important from the different widgets developed. In addition, a column showing the Steering RAG value was added. In order to display the trend, each cell contains either three numbers or three bubbles; the large number represents the current month and the smaller numbers represent the two previous months. For the cells with bubbles, the background colour of the cell is the current month, and the two bubbles represent the two prior months. The specific values that determine if a field is red, amber or green are explained in a comment that pops up when scrolling over the column headings in Excel. If the user wants to see why a cell is amber or red, they can simply scroll over the cell and a comment will appear showing the details about the projects that have issues.

Programme	Steering RAG	Approved Evaluation %	Good Data Quality %	Effort Quality # Issues	# of Missing Docs	Status # Projects			
	(Current, M-1, M-2)					Prog Overall	Overall	Time	Cost
Bonds, MBS, Listed		100%	100%	1	1		0 0 0	0 0 0	1 1 1
		100%	98%	3	0		0 0 0	0 0 0	2 1 1
		100%	98%	2	0		7 7 7	6 7 7	4 4 4
Client Clearing		80%	95%	0	1		0 0 0	1 2 0	5 4 4
		100%	93%	1	4		1 1 0	1 1 1	0 0 0
		100%	94%	0	0		4 4 3	3 2 3	0 0 0
DC Transversal		100%	100%	0	0		0 0 0	0 0 0	0 0 0
		0%	100%	0	0		0 0 0	0 0 0	0 0 0
		0%	97%	0	0		3 3 3	3 3 3	3 3 3
ETS - FX		75%	99%	0	0		0 0 0	0 1 1	2 2 3
		92%	94%	0	0		1 2 2	0 0 0	3 4 2
		42%	92%	0	2		11 10 10	12 11 11	7 6 7
FX Flow		75%	100%	0	0		0 0 0	3 3 3	1 1 1
		100%	100%	0	0		3 3 3	0 0 0	0 0 1
		100%	93%	0	0		1 1 1	1 1 1	3 3 2
IRD		80%	100%	3	0		0 0 0	0 1 1	2 2 2
		86%	100%	3	2		0 1 1	0 0 0	1 3 3
		86%	100%	0	2		5 6 6	5 6 6	2 2 2
Repo		100%	100%	0	0		0 0 0	0 0 0	1 1 1
		100%	100%	1	0		0 0 0	0 0 0	0 0 0
		100%	100%	1	0		3 3 3	3 3 3	2 2 2

Figure 26: Projects Heat Map

4.2.3.2 Projects Issue List

The Projects Issue List widget (Figure 27) displays a list of details regarding the red and amber issues identified in the Projects Heat Map. This list can be filtered by Programme, by Manager, or by the other column headings. The list shows data for the current month and would ideally be updated as soon as the information is updated in Project Register.

Programme	Project	ID	Manager	Issue Type	Issue
Bonds, MBS, Listed	Envelope - Bonds Front to Back	#N/A	Olivier Magere	Effort Quality	Envelopes & Umbrellas with Actuals
Bonds, MBS, Listed	TCN STAR Integration	19373	Robert Pearman	Project Documentation	Without PID
Client Clearing	STAR - Client Clearing	18680	Audrey Moncomble	Evaluation	Not Submitted
Client Clearing	FI Client Clearing (SC)	19021	Frios Manolas	Data Quality	Milestone < 100% but Milestone Fcst End Date Passed
Client Clearing	STAR - Client Clearing	18680	Audrey Moncomble	Data Quality	Milestone < 100% but Milestone Fcst End Date Passed
Client Clearing	CD Client Clearing - Trade Capture	18972	Steve Judge	Project Documentation	Without Usr Req

Figure 27: Projects Issue List

4.2.3.3 Projects List

The Projects List (Figure 28) is a reference widget that lists all the different programmes, projects, IDs and managers for the Fixed Income IT department. Ideally this widget would be linked to the Project Register database to keep the information up-to-date. For demonstration purposes, the figure below only shows an extract of the actual widget for one of the programmes; the actual widget would include all programmes and projects in the department.

Programme	ID	Manager
Bonds, MBS, Listed		Olivier Magere
Bonds, MBS, Listed Front to Back (SC)	11706	Olivier Magere
Listed Derivatives BO - Enhancements	13781	Anne Guichard
Deal Capture Regression Testing for Releases - Bonds	13619	Adam D Scott
Deal Capture Regression Testing for Releases - Futures	13621	Adam D Scott
STAR small enhancement for Bonds	11905	Phil Christie
STAR small enhancement for Futures	16369	Phil Christie
TCN STAR Integration	19373	Robert Pearman

Figure 28: Projects List

4.3 BUDGET CATEGORY

Currently, the PPME monthly report includes budget information for Mr Powell's department at an overall level. The objective is to offer Mr Powell a view of budget information on a drill-down level within his department. This category did not require the development of multiple widgets since the Budget Heat Map displays all of the necessary data. Among the most important data displayed is the Full Year Forecast compared to the Revised Forecast, the TBD Percentage Forecast and a breakdown of the employee type by permanent, contractor and consultant.

4.3.1 SCHEME

The following is a description of the Budget Heat Map. For more details, the Budget Scheme can be found in Appendix F

Widget:

Budget Heat Map

Description:

Shows a summary of:

- Revised budget
- Full Year Forecast
- FYF vs. Rev. in m/y and %
- Run Rate %
- FYF%-Run Rate%
- TBD% of forecast
- Staff Type % for each programme and project

4.3.2 HOME PAGE

The Budget category includes all necessary information within the Budget Heat Map (Figure 29). The Revised and Full Year Forecast are obtained from Badger. This data is used to calculate the values for the following four columns. The TBD percentage was derived from Badger. The last three columns show the breakdown of the budget by Staff Type. Here the user can see the balance between Permanent, Contractor and Consultant employees.

Programme	Revised	FYF	FYF vs Rev.		Run Rate %	FYF % - Run Rate%	TBD % of Forecast	Staff Type %		
			m/y	%				Permanent	Contractor	Consultant
Bonds, MBS, Listed	19.06	17.27	-1.79	91%	86%	5%	0%	70%	30%	0%
IRD	32.03	32.87	0.85	103%	104%	-1%	0%	63%	37%	0%
Repo	10.52	10.78	0.26	102%	96%	6%	3%	58%	42%	0%
DC Transversal	39.61	37.88	-1.74	96%	93%	3%	1%	78%	7%	15%
FX Flow	22.96	22.95	-0.01	100%	97%	3%	0%	85%	9%	6%
ETS - FX	74.90	70.02	-4.88	93%	88%	6%	2%	46%	25%	29%
Client Clearing		7.64	7.64			0%	2%	33%	60%	6%
Total/Average:	199.08	199.41	0.33	100%	94%	6%	1%	62%	30%	8%

Figure 29: Budget Heat Map

4.4 SUMMARY

The results and analysis chapter summarises all of the widgets developed for the Recruitment, Projects and Budget categories. The widgets were developed according to specific KPIs identified by Mr Powell as the most important for his personal dashboard. As the project evolved, we identified that a home page view for each category was the most useful method of displaying information.

5. CONCLUSIONS

Dashboard development is currently a popular topic within different departments at BNP Paribas. Managers have shown interest in the project, provided valuable input, and hopefully gained ideas from our work. This leads us to believe that the dashboard concept will have an impact on the way management supervises performance not only within the Deal Capture IT department but across the organisation.

After creating the widgets for the Recruitment, Projects, and Budget categories, we have put together a document called the Performance Dashboard Concept describing the details of each of the widgets. This document was included in a group of files containing all the category schemes, the actual widgets and data used to create them, and the different presentations and reports. The intention behind these deliverables is to serve as the guide for the future development of the dashboard.

5.1 DELIVERABLES

After we leave BNP Paribas London, Mr Powell has expressed his desire to continue the dashboard vision project. The Performance Dashboard Concept is a document that can be used to understand how we developed each widget. Ideally, a similar development technique can be used to create new widgets for the current and future categories. The document would help whoever is assigned to continue the project to understand the different data sources and contacts used in the creation of the individual widgets. Additionally, the document describes each widget and provides detailed widget notes to understand the filters and methods used during the creation process.

5.2 IMPACT OF THE DASHBOARD

The creation of a customisable dashboard will impact the way data is presented and analysed by various levels of management. The current information flow process within the Deal Capture IT department involves multiple data sources, some of which are only updated on a monthly basis. The dashboard would allow Mr Powell and other managers to view the key performance indicators from each of these data sources all in one place. The overall impact of

the dashboard should help to ease the process of interpreting complex data and improve the way managers oversee their areas.

5.3 APPLICABILITY ACROSS AND WITHIN DEPARTMENTS

One of the ideas behind the dashboard vision is that it can be customised to be used by programme, recruitment, and execution managers. During the development process we focused on Mr Powell's point of view while keeping in mind how different managers could have customised views. The "widgetised" vision of the dashboard allows for this dashboard concept to easily be expanded by developing additional widgets to fit the needs of other managers. These widgets would be added to a library that all users could access to choose the widgets they want for their personalised dashboard. Furthermore, the dashboard would display a uniform view of the same information across all departments. This would allow for applicability across departments as well as within departments.

6. RECOMMENDATIONS

After developing the Performance Dashboard Concept, there are several recommendations we would like to make to BNP Paribas London. These include a list of next steps as a continuation of our project, suggestions for data sources, and gaining input from other managers. While we were only able to touch on three categories during our 8 weeks in London, we have provided a suggested a course of action to continue this dashboard project.

6.1 NEXT STEPS

The vision we have developed for the performance dashboard is the first step in the development of the actual dashboard. This vision and the design of widgets for three of the nine categories serve as a guide for the development of the other widgets and categories. The following are a set of recommended steps to follow as a continuation of our project.

6.1.1 DEFINE PROJECT SCHEDULE, SCOPE AND RESOURCES

One of the initial steps needed to continue the dashboard development is to define the project within the department and company systems. To do so, start and end dates need to be defined along with assigning resources. From there, a project schedule can be defined to determine how the remaining 6 categories should be prioritised. An additional component of the project scope includes defining a pilot and roll-out schedule. The pilot version can be implemented in one area and once feedback and adjustments have been made, a roll-out schedule can be used to test the pilot in other areas. This pilot version might focus on widgets from only a few categories before continuing to develop more widgets.

6.1.2 COORDINATE WITH GOVERNANCE DEPARTMENT

The Governance department is presently working on their own dashboard project. As a part of their dashboard creation process, Governance is currently reviewing all KPIs. The development of the Fixed Income IT Deal Capture dashboard should take into account the KPIs and ideas analysed within the Governance dashboard project. These KPIs should be considered as additional widgets that can be added to the widget library.

6.1.3 AGREE ON TECHNICAL IMPLEMENTATION

One of the key next steps is to agree on the technical implementation for the dashboard. This includes deciding which software to use and who will develop and maintain it. Along these lines, it is important to identify how data will be obtained from the different company databases. The fiit.net team has recently been granted access to hourly snapshots of the data stored in the Project Office data systems, yet additional data needs to be obtained from other sources for the remaining categories.

6.2 SUGGESTIONS FOR DATA SOURCES

During our analysis of the data sources used to make the widgets, we came up with a few suggestions to aid in the creation and use of the widgets. For the New Joiners Checklist widget, there is a checklist showing whether or not a new joiner has a phone, blackberry, computer, laptop, new joiner form, and desk. Currently, this information is not recorded and therefore the widget cannot be functional. We would recommend that this information be recorded, perhaps on the WSTP spreadsheet, to measure this information. Additionally, the development of a SharePoint application to hold all of the data from the WSTP spreadsheet could allow for greater control, audit trails, sharing ability, etc.

Another essential concern regarding the data sources is the timeliness of updates. Some of this information is only updated once a month and this would not be as useful to senior management as information that is updated more frequently. The dashboard will ideally be updated in real time with certain widgets updated on an hourly basis; however this would not be as useful if the information is not updated often. During one of our presentations, some of the managers under Wells were concerned that they would have no incentive to update their information more frequently. There needs to be some type of added value for managers to update sources so that Wells can see the most updated information on his dashboard.

6.3 INPUT FROM OTHER MANAGERS

The dashboard vision that we have been working on has primarily been focused around Mr Powell's point of view. During our time in London, we had a few meetings to hear ideas from the perspectives of other execution managers and programme managers, however due to a lack of time we were not able to investigate very far into other viewpoints. Since this project will eventually be applicable to all levels of management across departments, it is essential to understand what all execution managers would like to see on a dashboard. The categories that Mr Powell has specified will most likely be applicable to the needs of the other execution managers, but there may be other categories to develop and add to the widget library.

Similarly, the project managers and recruitment managers may need a different set of widgets added to the library. Some managers expressed a concern that the dashboard sounded useful for Mr Powell, but they did not see how it could be applied to fit their needs. The dashboard should be applicable to all levels, and by having input from all levels of management, additional widgets can be developed that will fit the needs of all managers.

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APPENDICES

APPENDIX A. SPONSOR DESCRIPTION

BNP Paribas was created in 2000 as the result of a merger between BNP (Banque Nationale de Paris) and Paribas (CSR Globe, 2010). BNP, created in 1966 by the merger of Banque Nationale du Commerce et de l'industrie (BNCI) and Comptoir National d'Escompte de Paris (CNEP), was privatised in 1993. In 1998, the Compagnie Financière de Paribas acquired the Campagne Bancaire and became simply Paribas. On May 22, 2000, BNP successfully bid out Société Générale for Paribas, and BNP Paribas was formed (BNP Paribas, 2010).

BNP Paribas, “the bank for a changing world”, is based in Paris, France with operations in 84 countries worldwide and over 202,500 employees (BNP Paribas, 2010). The bank has three core businesses: retail banking, corporate and investment banking, and investment solutions. As of November 2010, BNP Paribas is ranked the largest bank in the world with about \$3.2 Trillion in assets according to both Forbes and Bloomberg (Forbes, 2010 and Logutenkova, 2010). According to Standard and Poor's, BNP Paribas has a credit rating of AA, which reflects “its strong and highly diversified business profile; sound financial position, characterised by contained risk, satisfactory profitability, adequate capitalisation, and satisfactory financial flexibility; good management; and moderate risk appetite” (Standard & Poor's, 2010).

BNP Paribas' Corporate & Investment Banking's Fixed Income division is one of the most recognised in its field in the world with over 1,900 specialised staff in 30 offices (BNP Paribas, 2010). The Fixed Income IT department helps to support BNP Paribas' currency operations and interest rate. The London office has about 200 Fixed Income IT Deal Capture employees divided into two teams: the Forex team, which takes care of all foreign exchange activities (including electronic markets and deal capture) and the IRG team, which provides support for the interest rate deal capture platform. Our liaison, Wells Powell, joined the IRG team in 2000 and was part of a six-person team that helped the system to grown to its current prominence. He took on the responsibility for FX Deal Capture in 2005 and for FX electronic markets in 2008.

APPENDIX B. CATEGORY SCHEME – RECRUITMENT

Widget:	Description:	Display Type:	Red/Amber/Green Definition:	View Options:	Default Time Scale:	Time Scale Options:	Source of Data:	Contact:	Update Frequency:	Comments:	Widget Creation Notes:
Unsecure TBDs	Calls for attention if TBDs are unnamed.	Graph	<ul style="list-style-type: none"> Open status unnamed TBDs Approved status unnamed TBDs Interviewing status unnamed TBDs 	By Department By Manager By Type of Hire	Monthly: Previous month, current month, and next 3 months	N/A	WSTP Spread Sheet	Alan Cable	Real-time	<p>Graph will be set by default to Department View. Will have a View Options menu.</p> <p>The user can scroll over the unnamed section for each month to see a detailed list of the recruiting managers with unnamed TBDs and the New NPR Name of those unnamed TBDs.</p>	<p>For this graph, we made a pivot table using the WSTP Spread Sheet.</p> <p>Filters: TYPE (contractor, graduate, permanent), Team (all), Manager (all)</p> <p>Column: Status</p> <p>Row: Phasing Start (filtered to next 6 months)</p> <p>Value: Count of New NPR Name</p> <p>From there, we created a stacked column graph using this information, where the different columns show the number of open (red), approved (amber), and interviewing (yellow) TBDs for each month. Each column represents a month for the next 6 months.</p>
Unsecure TBDs By Manager	Calls for attention if TBDs are unnamed.	Graph	<ul style="list-style-type: none"> Open status unnamed TBDs Approved status unnamed TBDs Interviewing status unnamed TBDs 	By Type of Hire	Includes unnamed TBDs of the next 3 months	Include unnamed TBDs in the next # months; user inputs #	WSTP Spread Sheet	Alan Cable	Real-time	<p>Graph will be set by default to Managers View. Will have a View Options menu to select type of hire.</p> <p>The user can scroll over the bars for each manager to see a detailed list of the TBDs.</p>	<p>For this graph, we made a pivot table using the WSTP Spread Sheet.</p> <p>Filters: TYPE (contractor, graduate, permanent)</p> <p>Column: Status</p> <p>Rows: Manager, Phasing Start (filtered to next 3 months), New NPR Name</p> <p>Values: Count of New NPR Name</p> <p>From there, we created a stacked column graph using this information, where the different columns show the number of open (red), approved (amber), and interviewing (yellow) TBDs for each month. Each column represents a recruiting manager.</p>
New Joiners Checklist	Shows a list of new joiners and a checklist for the equipment necessary to start working.	Checklist	<ul style="list-style-type: none"> Missing item. 	By Recruiting Manager	Next 2 weeks, any past outstanding.	Next 3 weeks Next 4 weeks Next # weeks. User inputs #.	WSTP Spread Sheet	Alan Cable	Real-time	<p>The checklist will be sorted in order of the starting date, meaning outstanding new joiners with an incomplete checklist will be listed first, followed by the new joiners starting in the next week.</p> <p>The checklist will include the following information in this order: Start Date, New NPR Name, Manager, Team, Phone, Blackberry, Computer, Laptop, New Joiner Form, and Desk. The user will have a filter option to sort this information by column.</p>	<p>This table was created by modifying a pivot table we made using the WSTP Spread Sheet.</p> <p>Filters: TYPE (contractor, graduate, permanent)</p> <p>Column: None.</p> <p>Rows: Manager, New NPR Name, Status, Actual start (filtered to next 4 weeks), Team</p> <p>Values: Weeks.</p> <p>The widget table is very similar to the pivot table. The phone, computer, etc. are all mock-up data since this information is not currently recorded.</p>
Quality Alert List	List of all quality issues and their description from the WSTP.	List	<ul style="list-style-type: none"> Quality alert identified. 	By Recruiting Manager	N/A	N/A	WSTP Spread Sheet	Alan Cable	Real-time	<p>The list of alerts will show the record (New NPR Name) as the rows and the alert type as columns. Next to the New NPR Name will be the name of the recruiting manager. A single record can have several alerts.</p> <p>Each column can be filtered so the user can see the quality alerts listed by manager or see how many of each type of alerts there are.</p>	<p>This list was created by sorting through the WSTP Spread Sheet and searching for possible quality alert issues. After a relatively thorough search was completed, a checklist was made with the New NPR Name, Recruiting Manager, and all the possible alerts. A list of these alerts can be found in the appendix labelled WSTP Quality Alerts List.</p>
Staff CF Target	Comparison of current staff vs. forecasted staff (May and September forecast)	Graph	<ul style="list-style-type: none"> Unnamed TBDs Named TBDs 	By Department By Type of Hire By Rationale By Location By Role	Calendar Year (monthly)	Include last year Include next year Next # months Last # months User inputs #	Yeti WSTP Spread Sheet Financial Report	Project Office Alan Cable	Hourly	<p>The three lines show three different forecasts (May, September and Current). The bars show the TBDs for the next three months broken down by named and unnamed. Yearly forecast of target staff is completed in August for the following calendar year based on budget. Updated forecasts are created in May and September.</p> <p>The current staff value is determined monthly and can be compared to the forecasted amounts (right now it is the October forecast line).</p> <p>The scope includes all employees that work for Mr Powell in all locations, even though they may not fall under his cost group.</p> <p>The graph should have an option as to what information you would like to see (can add or remove May forecast, September forecast, Current Staff, Budgeted Forecast, etc.)</p>	<p>The main line graph for this widget comes from a previously created graph from the Financial Report. This graph was created using a pivot table:</p> <p>Filters: LocationDscp (all), StatusDscp (contractor, graduate, permanent), Rationale (all), TeamDscp (all)</p> <p>Column: Fast Type</p> <p>Rows: PeriodYear, PeriodMonth</p> <p>Values: Count of Presence.</p> <p>Using this graph, we added in an additional vertical axis with the TBD count and column graphs for the remaining months of the year showing the TBDs broken down into named and unnamed TBDs.</p>
Start Delay Average	Shows the start delay average by recruiting managers. Start delay is the difference between the phasing start date and actual start date.	Graph	N/A	By Recruiting Manager By Type of Hire By Rationale By Location	Includes new joiners with actual start date in the last 6 months.	Last 6 months Last 12 months Last # months User inputs #	WSTP Spread Sheet	Alan Cable	Real-time	<p>The difference between the phasing start date and the actual start date is calculated and averaged for each recruiting manager.</p> <p>The graph can be filtered to view only a specific rationale, location or type of hire. When scrolling over you should be able to view the number of joiners for each manager.</p>	<p>For this graph, we made a pivot table using the WSTP Spread Sheet.</p> <p>Filters: TYPE (contractor, graduate, permanent), Phasing Start (all), Actual Start (last 6 months)</p> <p>Column: None.</p> <p>Rows: Manager, New NPR Name</p> <p>Values: Average of Actual Start Delay (weeks)</p> <p>From there, we created a column graph to show the average start delay for each manager.</p>
Start Delay Average Trend	Shows the start delay average trend for the entire department in the last year. Start delay is the difference between the phasing start date and actual start date.	Graph	N/A	By Recruiting Manager By Type of Hire By Rationale By Location	Last 12 months	Last 6 months Last # months Next # months User inputs #	WSTP Spread Sheet	Alan Cable	Real-time	<p>An average of the managers Start Delay Average is calculated. This is done for every month displayed in order to see the trends.</p>	<p>For this graph, we made a pivot table using the WSTP Spread Sheet.</p> <p>Filter: Actual Start (last 12 months)</p> <p>Column: None.</p> <p>Rows: Phasing Start</p> <p>Values: Average of Actual Start Delay (weeks)</p> <p>From there, we created a line graph that shows the actual start delay in weeks over the last calendar year.</p>

APPENDIX C. CATEGORY SCHEME – RECRUITMENT HOME PAGE

Description:	Display Type:	Red/Amber/Green Definition:	View Options:	Filters Used:	Time Scale Options:	Source of Data:	Contact:	Update Frequency:	Comments:	Widget Creation Notes:
Summarises data from most of the widgets into a condensed form. Displays trends when possible.	Table	<p>Unsecure TBDs:</p> <ul style="list-style-type: none"> ● > 2 ● 1-2 ● 0 <p>Quality Alerts:</p> <ul style="list-style-type: none"> ● > 2 ● 1-2 ● 0 <p>Actual Start Delay Average:</p> <ul style="list-style-type: none"> ● > 6 weeks ● 5 - 6 weeks ● < 5 weeks 	N/A	<p>Unsecure TBDs:</p> <p>Type Filter:</p> <ul style="list-style-type: none"> - Contractor - Graduate - Permanent <p>Status Filter:</p> <ul style="list-style-type: none"> - Approved - Interviewing - Open <p>Phasing Start Filter:</p> <ul style="list-style-type: none"> - Current and next 2 months <p>Secured Hire:</p> <p>Type Filter:</p> <ul style="list-style-type: none"> - Contractor - Graduate - Permanent <p>Status Filter:</p> <ul style="list-style-type: none"> - Accepted - Filled - Started <p>Actual Start Filter:</p> <ul style="list-style-type: none"> - Current and last 2 months <p>Quality Alerts:</p> <p>No Filters</p> <p>Actual Start Delay Average:</p> <p>Type Filter:</p> <ul style="list-style-type: none"> - Contractor - Graduate - Permanent <p>Phasing Start Day Filter:</p> <ul style="list-style-type: none"> - All <p>Actual Start Day Filter:</p> <ul style="list-style-type: none"> - Last 6 months 	Refer to Filters Used.	WSTP Spread Sheet	Alan Cable	Real-time	<p>The Heat Map summarises the data from the recruitment widgets with the most important KPIs for Mr Powell. The KPIs are listed as column headings and data is displayed by recruiting manager. For KPIs where showing the trend is important, the cell includes three numbers: the top number shows information from the current month and the two smaller ones below representing the next two months or the previous two months.</p> <p>When scrolling over items that require further explanation, such as amber or red alerts, a comment pops up with the New NPR Name, TBD Status, Manager Name or Alert Type.</p> <p>The bottom of the Heat Map displays totals and averages.</p>	The Recruitment Heat Map was created by combining information from several recruitment widgets. Different filters were used for each column (see filters used). Additionally, comments were added to show the New NPR Name, TBD Status, Manager Name, or Alert Type depending on the column.
Shows the number of upcoming new joiners and highlights those with missing equipment for work.	Table	<p>Previous Outstanding:</p> <ul style="list-style-type: none"> ● > 0 ● = 0 <p>Current and Next Week:</p> <ul style="list-style-type: none"> ● > 0 ● = 0 <p>In 2 Weeks</p> <ul style="list-style-type: none"> ● > 0 ● = 0 <p>In 3 - 4 Weeks:</p> <ul style="list-style-type: none"> ● > 0 ● = 0 		<p>Actual Start Day Filter:</p> <p>Current and following 4 weeks.</p>	Next # weeks (User inputs #)	WSTP Spread Sheet	Alan Cable	Real-time	<p>This small table is a complement to the Recruitment Heat Map. It shows the upcoming new joiners and highlights those with missing work equipment. It also highlights past joiners with missing equipment.</p> <p>When scrolling over each number, a comment pops up with the list of New NPR Names and their recruiting managers for that particular start time.</p>	This widget was created by using the WSTP spreadsheet to count the number of new joiners for the current and next week, in 2 weeks, and in 3-4 weeks. The data for missing equipment is mock-up as this data is not currently recorded.
List of items that need attention from the recruitment widgets and Recruitment Heat Map.	List	N/A	<p>By Manager</p> <p>By Issue Type</p> <p>By Issue</p> <p>By New NPR Name</p>	Same as Recruitment Heat Map.	Same as Recruitment Heat Map.	WSTP Spread Sheet	Alan Cable	Real-time	<p>This widget is a more detailed list of the issues highlighted in the recruitment widgets and Recruitment Heat Map. The list is grouped by Recruiting Manager and can be filtered by any of the column headings.</p> <p>The column labeled "Number of Weeks as Issue" is a recommended implementation since there is no current method of counting the number of weeks an issue has been active. This would allow the user to prioritise the order of solving issues.</p>	This widget was created by combining all issues from the Recruitment Heat Map into list form.

APPENDIX D. CATEGORY SCHEME – PROJECTS

Widget:	Description:	Display Type:	Red/Amber/Green Definition:	View Options:	Default Time Scale:	Time Scale Options:	Source of Data:	Contact:	Update Frequency:	Comments:	Widget Creation Notes:
Evaluations Submitted	Shows a stacked column graph of the percent of approved, rejected, no action, and not submitted evaluations by programme.	Graph	<ul style="list-style-type: none"> ● Evaluations Not Submitted ● Evaluations No Action ● Evaluations Rejected ● Evaluations Approved 	By Programme	Current Month		Project Office: Consolidated Data - Jan - Oct.xls	Elaine Greenhalgh	Hourly	Graph has programme name listed on the horizontal axis and percentages on the vertical axis. Each programme has a stacked column showing the percentage of accepted, rejected, no action, and not submitted evaluations. Has a dotted line showing the average approved evaluations, which is the number of approved evaluations over the total evaluations (both submitted and not submitted). Programmes are sorted from worst on the left to best on the right.	<p>We started by making a pivot table using the "data Oct" tab:</p> <p>Filters: Execution Manager, PO Column: EvalTStatName Rows: PgmName, Activity Type Value: Count of ProjID</p> <p>From there we made a static table with Approved, Rejected, No Action, Submitted, and Not Submitted as the columns and the programme names as the rows. We then filled in the values so they were the percentage of each based on the information from the pivot table. We then created the graph based on this table. We also included an average approved line that took the percentage of total approved over total possible evaluations.</p>
Evaluations Trend	Shows the trend of the percentage of evaluations submitted and approved by programme over the last 6 months.	Graph	N/A	Submitted and Approved Submitted and Rejected Submitted and No Action	Last 6 Months (Monthly)	Last # months User inputs #	Project Office: Consolidated Data - Jan - Oct.xls	Elaine Greenhalgh	Hourly	Graph has the last 6 months as the horizontal axis and percentages as the vertical axis. Each programme has a line showing what percentage of evaluations were submitted and approved each month as well as an overall line showing the overall percentage of evaluations submitted and approved.	<p>For this graph, we started by creating a pivot table using the "All Months" tab that we created to show just the information for Wells.</p> <p>Filters: PO, Activity Type, and EvalTStatName Column: PgmName Row: Period Value: Count of ProjID</p> <p>Then we created two separate static tables using this pivot table. The first (filters set to all) was to determine the total number of evaluations each month, the second (EvalTStatName filter set to green, rest set to all) to find the total number of approved evaluations each month. Afterwards we created another static table that had the dates listed vertically and the programmes listed across the top. Using the first two static tables, we divided the accepted evaluations by the total evaluations to determine the percentage of accepted evaluations. This is the information we used to create the graph.</p>
Project Status Table	Shows a list of projects and programmes with at least one non-green overall, time or cost status.	Table	<ul style="list-style-type: none"> ● Red status ● Amber status ● Green status ● Undefined status 	By Programme	Current Month	N/A	Project Office: Eval Report.xls	Elaine Greenhalgh	Hourly	The table shows the current status as recorded in Project Register for the Overall, Time, and Cost status. For the red, amber and undefined statuses the number shows the months this project has been in such status. Programme status are always displayed but projects are only displayed if at least one status is in a non-green value.	This table was created by listing the project or programme, ID number, project/programme manager, and the status for overall, time, and cost. If the status is red or amber, a filter was used on the project data tab on Eval Report to determine how many months that particular project or programme has been at that status.
Project Card	Drill down from the Project Status Table; shows the description of the status recorded by the project managers.	Table	<ul style="list-style-type: none"> ● Red status ● Amber status ● Green status ● Undefined status 	By Programme By Project	Current Month	N/A	Project Office: Eval Report.xls	Elaine Greenhalgh	Hourly	The table shows the drill down of the Project Status Table by including the project managers' comments on the status. This detail view includes more data, hence only projects for one programme should be displayed at a time.	This table was created the same way as the previous table. Additionally, the status description was added for overall, time, and cost.
RAG Project Count	Shows which programmes have red, amber, green, and undefined projects for the current month.	Graph	<ul style="list-style-type: none"> ● Red Projects ● Amber Projects ● Green Projects ● Undefined 	By Programme Overall Status Time Status Cost Status	Current Month	N/A	Project Office: Consolidated Data - Jan - Oct.xls	Elaine Greenhalgh	Hourly	<p>Graph with the names of all the programmes as the horizontal axis and a count for the vertical axis. The columns show the total projects for each programme, broken down into the overall status.</p> <p>The status being analysed is the Overall Status, but the widget has the option to view the Time Status and Cost Status.</p>	<p>To make this widget, we created a pivot table using data from the "data Oct" tab:</p> <p>Filters: PO (set to all), Execution Manager (set to Wells Powell) Column: OverallTSL Row: PgmName Value: Count of ProjID</p> <p>Then we made a chart using these values and changed the legend colours so they showed red, amber, green, or grey (undefined) depending on the statuses they represent.</p> <p>Sort: Left to right by higher number of Red, then Amber, then Undefined</p>
Green Projects Trend	Shows a trend of the percentage of green projects by programme over the last 6 months.	Graph	N/A	Green Projects Amber Projects Red Projects Overall Status Time Status Cost Status	Last 6 Months (Monthly)	Last # Months (User inputs #)	Project Office: Consolidated Data - Jan - Oct.xls	Elaine Greenhalgh	Hourly	Graph has the last 6 months on the horizontal axis and a percentage on the vertical axis. A line graph will have individual lines for each programme to show the percentage of green projects under that programme each month as well as an overall green projects line. Will have a view option to show red or amber project percentages. The user may also want to have the option to view only certain activity types. The status being analysed is the Overall Status, but the widget has the option to view the Time Status and Cost Status.	<p>For this graph, we started by creating a pivot table using the "All Months" tab that we created to show just the information for Wells:</p> <p>Filter: OverallTSL Column: PgmName Row: Period Value: Count of ProjID</p> <p>Then we created two separate static tables using this pivot table. The first (filter set to all) was to determine the total number of project each month, the second (filter set to green) to find the total number of green projects each month. This could also be done to determine the red and amber projects. After we created another static table that had the dates listed vertically and the programmes listed across the top. Using the first two static tables, we divided the green projects by the total projects to determine the percentage of green projects. This is the information we used to create the graph.</p>

Widget:	Description:	Display Type:	Red/Amber/Green Definition:	View Options:	Default Time Scale:	Time Scale Options:	Source of Data:	Contact:	Update Frequency:	Comments:	Widget Creation Notes:
Data Quality	Shows a stacked column graph of the percentage of conforming and non-conformance data by programme.	Graph	<ul style="list-style-type: none"> Non-Conforming Conforming 	By Programme	Current Month	N/A	Project Office: Data Quality Raw Data Oct10.xls	Petra Vrbova	Hourly	<p>Graph has programme name on the horizontal axis and percentages on the vertical axis. Each programme has a stacked column showing the percentage of projects with conforming data quality and the percentage of projects with non-conforming. Has a dotted line showing the conforming data quality average to compare the programmes to the average. Programmes are sorted from worst on the left to best on the right.</p> <p>The user can click on any stacked column to see each project and its data quality issue(s) that fall under that column.</p>	<p>Since each project, maintenance, and umbrella has a different amount of data quality checks, and the amount of quality checks are different depending on if the activity is CMMI or non-CMMI, we had to start by determining the total number of data checks for each programme. This process included making a static chart with 4 rows for each programme and activity type, # not-CMMI activities, # not-CMMI quality checks, # CMMI activities, # CMMI quality checks, total projects, and total checks. The 4 rows for each programme have project, maintenance, umbrella, and total as the activity type name, and the rest of the information is filled out accordingly. The number of not-CMMI/CMMI checks for projects are 11 and 9, for maintenance are 7 and 7, and for umbrellas are 8 and 6. To find the number of data quality issues by programme, we used the "MthByMth Good Qlty by Exc. Mgr" tab and the Quality Data section pivot tables for both CMMI and non-CMMI, adding in programme to the rows. To find the total number of possible data issues, we used the "MonthByMonth Good Quality by FL" tab and the pivot tables for CMMI/non-CMMI under Evaluation Table, with the filter set to Wells Powell. After, we filled in the table we made and multiplied out the number of quality checks by the number of each activity to get the total quality checks for each programme.</p> <p>Once we filled out this table, we made a separate static table with the programme names as the rows and good count, good %, non-conformances count, non-conformances %, average, and total quality checks as the columns. Using this table, we created a stacked column graph of the percentages of good and non-conformance data per programme, adding together both CMMI and non-CMMI quality checks.</p>
Conforming Data Quality Trend	Shows the trend of the percentage of good quality data by programme over the last 6 months.	Graph	N/A	By Programme	Last 6 Months (Monthly)	Last # Months (User inputs #)	Project Office: Data Quality Raw Data Oct10.xls	Petra Vrbova	Hourly	<p>Graph has the last 6 months listed on horizontal axis and percentages of conforming data quality as the vertical axis. Each programme has a line showing what percentage of data was conforming quality for each month. The overall line shows the overall percentage of good quality data for each month.</p>	<p>This widget used the same system as the previous widget (data quality) for each month to determine how many total data quality checks there are per programme per month and how many good data quality checks per month. This is done the same way using the same pivot tables, but using the period filter to choose each month for the past 6 months.</p> <p>Then we made a separate static table with the programme name as the rows and count of good data, total amount of data counts, and % of good data for each month for the past 6 months. Using this table, we created the trends chart.</p>
Effort Quality	Shows a stacked column graph of the percentage of conforming and non-conformance data by programme.	Graph	<ul style="list-style-type: none"> Non-Conforming Conforming 	By Programme	Current Month	N/A	Project Office: Effort Quality Raw Data October 10.xls	Petra Vrbova	Hourly	<p>Graph has programme name on the horizontal axis and percentages on the vertical axis. Each programme has a stacked column showing the percentage of projects with conforming effort quality and the percentage of projects with non-conforming. Has a dotted line showing the conforming effort quality average to compare the programmes to the average. Programmes are sorted from worst on the left to best on the right.</p> <p>The user can click on any stacked column to see each project and its effort quality issue(s) that fall under that column.</p>	<p>For this graph, we started by creating a pivot table using the "EffortQualityData" tab:</p> <p>Filters: PO, CCMgr, Period</p> <p>Column: Σ Values</p> <p>Row: PgmName</p> <p>Value: Completed Projects with Planned Forecast, Envelopes & Umbrellas with Actuals, Not Started Projects with Actuals, InProgress Projects Without Additional Forecast, InProgress Projects Without Actuals or Forecast</p> <p>We set the filters to all, Wells Powell and 10-1-10. Then we made a graph using the pivot chart. All cells with X's were highlighted red.</p>
Conforming Effort Quality Trend	Shows the trend of conforming effort quality by program over the last 6 months.	Graph	N/A	By Programme	Last 6 Months (Monthly)	Last # Months (User inputs #)	Project Office: Effort Quality Raw Data October 10.xls	Petra Vrbova	Hourly	<p>Graph has the last 6 months listed on the horizontal axis and the percentage of conforming effort quality issues on the vertical axis. The dotted line shows the average of the conforming effort quality for each programme.</p>	<p>We made a pivot table:</p> <p>Filters: PO, CCMgr</p> <p>Column: PgmName</p> <p>Row: Period</p> <p>Value: Count of ProjID</p> <p>We set the filters to all and Wells Powell, and then filtered Period to include only the last 6 months. Then we made a graph using the pivot chart.</p>
Missing Documentation	Shows total possible documents to be attached broken down into attached and missing.	Graph	<ul style="list-style-type: none"> Missing Submitted 	By Programme	Current Month	N/A	Project Office: Documentation Raw Data October 10.xls	Petra Vrbova	Hourly	<p>Graph has programme name as the horizontal axis and the percentage of attached documents as the vertical axis. Programmes are sorted from worst on the left to the best on the right.</p> <p>The user can click on any stacked column to see what documents are missing for what projects.</p>	<p>First the number of documents was determined using the "data both" tab we created. We filtered by Wells Powell to find the missing documents for both CMMI and non-CMMI activities. Then we created a static table with programme name as the row and all CMMI and non-CMMI possible documents with a total of all CMMI documents, a total of all non-CMMI documents, and a grand total amount of documents missing for each program. We filled this chart in manually using the information from the "data both" tab. Then we created a graph using this information with stacked columns showing the amounts of missing CMMI and non-CMMI documents.</p>
Attached Documents Trend	Shows the trend of the percentage of correct documents by programme over the last 6 months.	Graph	N/A	By Programme	Last 6 Months (Monthly)	Last # Months (User inputs #)	Project Office: Documentation Raw Data October 10.xls	Petra Vrbova	Hourly	<p>Graph has the last 6 months as the horizontal axis and the percentage of correct documentation as the vertical axis. Each programme is represented in a different colour while the black dotted line represents the average for each month.</p>	<p>The information used for this graph was extracted the same way as for the Missing Documentation graph in the Project Documentation widget, however this time a ratio of correct documentation over total possible documentation was calculated. This was computed for each programme over the last 6 months.</p>

APPENDIX E. CATEGORY SCHEME – PROJECTS HOME PAGE

Widget:	Description:	Display Type:	Red/Amber/Green Definition:	View Options:	Filters Used:	Time Scale Options:	Source of Data:	Contact:	Update Frequency:	Comments:	Widget Creation Notes:
Projects Heat Map	Summarises data from most of the widgets into a condensed form. Displays trends when possible.	Table	Steering RAG: <ul style="list-style-type: none"> More than 1 month late Late within one month Within target frequency Approved Evaluation %: <ul style="list-style-type: none"> < 80% 80% to < 100% 100% Good Data Quality %: <ul style="list-style-type: none"> < 80% 80% to < 100% 100% Effort Quality # Issues: <ul style="list-style-type: none"> > 1 = 1 = 0 # of Missing Docs: <ul style="list-style-type: none"> > 0 = 0 All Status: <ul style="list-style-type: none"> Red Status Amber Status Green Status 	N/A	N/A	Current Month	Steering RAG: Project Office: Consolidated Data - Jan Oct.xls Approved Evaluation %: Project Office: Consolidated Data - Jan Oct.xls Good Data Quality %: Project Office: Data Quality Raw Data Oct10.xls Effort Quality # Issues: Effort Quality Raw Data October 10.xls # of Missing Docs: Project Office: Documentation Raw Data October 10.xls All Status: Project Office: Consolidated Data - Jan Oct.xls	Steering RAG: Elaine Greenhalgh Approved Evaluation %: Elaine Greenhalgh Good Data Quality %: Petra Vrbova Effort Quality # Issues: Petra Vrbova # of Missing Docs: Petra Vrbova All Status: Elaine Greenhalgh	Hourly	<p>The Heat Map summarises the data from the projects widgets by selecting the most important KPIs for Mr Powell. The KPIs are listed as column headings and data is displayed by programme.</p> <p>For KPIs where showing the trend is important, the cell includes three numbers: the top number shows information from the current month and the two smaller ones below representing the previous two months.</p> <p>The status columns are broken down into three cells for red, amber and green. This way the user can see the total number of projects in each status.</p> <p>When scrolling over items that require further explanation, such as amber or red alerts, a comment pops up with the project Name, ID and Manager.</p>	The Projects Heat Map was created by combining information from several projects widgets. Information was included for the current month, past month, and 2 months ago to show trends. Additionally, comments were added to show more detailed information.
Projects Issue List	List of items that need attention from the projects widgets and Projects Heat Map	List	N/A	By Programme By Project By Project ID By Manager By Issue Type By Issue	N/A	Same as Projects Heat Map	Same as Projects Heat Map	Same as Projects Heat Map	Hourly	<p>This widget is a more detailed list of the issues highlighted in the projects widgets and Projects Heat Map.</p> <p>The list is grouped by Programme and can be filtered by any of the column headings.</p> <p>The column labelled "Number of Weeks as Issue" is a recommended implementation since there is no current method of counting the number of weeks an issue has been active. This would allow the user to prioritise the order of solving issues.</p>	This widget was created by combining all issues from the Projects Heat Map into list form.
Projects List	List of all projects grouped by Programme.	List	N/A	N/A	N/A	N/A	Project Office: Consolidated Data - Jan Oct.xls	Elaine Greenhalgh	Hourly	This widget shows a list of projects, their ID and the Manager. This list is used for reference purpose only.	This widget was created by creating a list of project/programmes, ID numbers, and project/program manager names.

APPENDIX F. CATEGORY SCHEME – BUDGET

Widget:	Description:	Display Type:	Red/Amber/Green Definition:	View Options:	Filters Used:	Time Scale Options:	Source of Data:	Contact:	Update Frequency:	Comments:	Widget Creation Notes:
Budget Home Page	<p>Shows a summary of:</p> <ul style="list-style-type: none"> Revised budget Full Year Forecast FYF vs. Rev. in m/y and % Run Rate % FYF%-Run Rate% TBD% of forecast Staff Type % for each programme and project 	Table	<ul style="list-style-type: none"> • > 120% • 101% to 120% • < 101% 	By Programme	See Widget Creation Notes	Current Month	ITO Project Report, ITO Resource Report	Elaine Greenhalgh, Petra Wbova	Hourly	<p>Shows a summary of budget activity and allows for drill down by project. For each programme, the table shows:</p> <ul style="list-style-type: none"> - Revised budget - Full year forecast - Full year forecast vs. the revised budget (both in man years and as a percent) - Run rate percent - Difference between the full year forecast and the run rate - Percentage of TBDs that make up the forecast - Staff type percent showing the percentage of permanent, contractors, and consultants. 	<p>To create this widget, we used information from both the ITO project report and the ITO resource report. Using the project report, we made a pivot table with:</p> <p>Filters: Unit (set m/y), Execution Manager (set to Wells Powell)</p> <p>Column: I Values</p> <p>Row: ProgrammeName, ProjectName, ProjectID</p> <p>Value: Revised, FYF, FYFvsRev, Run Rate Diff, Sum of Actuals</p> <p>This pivot table got us the information for the revised, FYF, and FYFvsRev (m/y). From there, we could calculate the FYFvsRev% by dividing FYF by Revised. We calculated the run rate % by taking the sum of actuals, dividing by 10 months (since data was from October), multiplied by 12 months (expected amount to spend by the end of the year), and divided by FYF. FYF% - Run Rate % is just the difference between those two columns.</p> <p>Alan added in a column to the Resource Report showing the TBD % of FYF and we used those values for the home page column.</p> <p>The Staff Type % was calculated using the Project Report and creating another pivot table with:</p> <p>Filters: Unit (set m/y), Execution Manager (set to Wells Powell), Actuals (all)</p> <p>Column: Status</p> <p>Row: ProgrammeName, ProjectName, ProjectID</p> <p>Value: Sum of Full Year Forecast</p> <p>Then we took the found the percentage for each type using the totals for each programme/project.</p>

APPENDIX G. WSTP QUALITY ALERT LIST

The following is a list of quality alerts from the WSTP spreadsheet.

- **Filled or Started** Status but No Start Date
- **Accepted, Filled or Started** Status but Missing Name
- Status is not **Accepted, Filled or Started** and Hires Name is filled
- **Replacement** Status with no Replacee Leave Date
- **Replacee** Name with no Replacee Leave Date
- Status **Replacement** but there is no Replacee Name
- Status New but there is a **Replacement** Name
- Actual **Start Date** in the Past and Still TBD
- **Actual Start Date** in the past and status not Started
- **Actual Start Date** but position not filled/started
- **Actual Start Date** but No Hire Name
- No Phasing Start Date
- Role is Blank
- CC is blank
- BLC is blank
- Missing **HR** Reference Code
- Missing **ODEON** Reference Code

APPENDIX H. DATA SYSTEMS AND SOURCES

Badger: The budget definition & tracking tool for Capital Markets Organisation & IT globally. This system is used to define the budget for each year. It compiles all currently planned projects for next year and displays them for managers to input next year's Man Year requirements. The user can see budget levels for individual project lines and the forecast as well as allocated budget for new projects. From Badger, users can view current year Budgets and Forecasts, view next year budgets by activity, team, and cost centre, and view current year and next year headcount phasing.

ODEON: Stands for Online Demand Electronic Order Network. BNP Paribas employees may log into this system to order resources, such as computers. It is also used to request the hiring of new Contract and Consultant employees, since they are considered as resources. ODEON is managed by the Procurement Department.

Peoplesoft: Software package used to request the hire of Permanent staff members.

Project Register: This system is a central repository of IT activity. It allows employees to track projects and programmes, complete monthly evaluations, and manage reports.

WSTP Spreadsheet: This is an Excel spreadsheet used by Wells Powell and his recruitment managers to administer the recruiting process. It contains a detailed record of all job openings and new hires. Other information such as the start date, recruiting manager, hire type, and hiring status are also shown.

Yetti: This tool manages information on resources, cost centres, teams, Budget Level C (BLC) and timesheet effort. Yetti allows the user to manage resource tasks and timesheets. It is also used to assign Budget Level Cs (BLCs) to resources, fill in forecasted man days per resources per project, submit timesheets, approve timesheets, view YTD actuals, view full year forecasts, and close BLCs to resources.

ZOO: ZOO is the junction of three different systems known as Project Register, Yetti and Badger. These systems interact with each other to provide the most accurate information.

APPENDIX I. WSTP TERMINOLOGY

Status: Refers to the status of a recruit through the recruitment process.

Open: Open position but not in toolset yet.

Approved: Interviewing for the position has not started, but in toolset.

Interviewing: Starting to see candidates for the position; have raised ODEON, etc.

Offered: Verbal offer has been given to a candidate.

Accepted: Offer has been verbally accepted. At this point, the name of the candidate can be filled into the spreadsheet since the position has been accepted.

Filled: Signed contract has been returned by the new joiner. There should be a start date set.

New/Repl: Recruitment scenario.

New: Hire that will increase headcount.

Replacement: Headcount neutral; replacing a leaver.

Conversion: Change in type or cost centre, etc.

Type: The contract-basis of employment.

Permanent: A direct employee of BNP Paribas.

Consultant: Resources provided on a time and materials basis.

Contractor: Temporary staff provided by an agency.

Graduate: Recent graduate on a recruitment programme.

Rationale: Identifies if the recruit is being funded by a special budget.

2012 eFX: Drive to increase BNPP's market share in electronic foreign exchange dealing.

Fortis: Merger with Fortis bank.

Normal: General budget (not special projects).

Etc.

Role: Main activity of the recruit.

Analyst: Analyses and documents business requirements.

Architect: Defines architecture for systems.

Configuration: Defines and manages source code and other libraries.

Developer: Writes software.

Manager: Management positions other than programme or project managers.

Other: We can't work out what they do either.

Prog Mgr: Manages a collection of projects.

Proj Mgr: Manages projects.

Support: First line user and technical support.

Testing: Ensuring software provides functionality as designed.

APPENDIX J. IMPORTANT RELATIVE CONCEPTS

Over the course of this project, several important relevant concepts are used. Below is a description of the different terms and concepts used throughout this report.

CMMI (Capability Maturity Model Integration): An approach to process improvement that helps to improve the performance of organisations. Certain documentation and quality checks are different depending if the project is CMMI or not. CMMI projects are run under a project management regime that has been independently certified by an external body.

Department: When the word department is used throughout this report, it is referring to Wells Powell's Department: IRG & FX Deal Capture.

Heat Map: Type of data display consisting of green, amber and/or red blocks of colour to show if an item requires attention. Items that are green do not require attention, whereas items that are amber or red require attention.

Key Performance Indicator (KPI): A measurement method used to evaluate the progress towards achieving a specific goal. Companies use KPIs to evaluate their success as a whole or within specific departments. KPIs are determined according to a specific goal that wants to be achieved.

New Joiner's Kit: Refers to the necessary items a new joiner needs to be ready to start work. This includes a phone, computer, desk, and other.

PPME (Project Portfolio Management & Execution) Dashboard: Monthly dashboard produced by the Project Office. Shows a compilation of data for each execution manager based off of monthly project evaluations and highlights red and amber projects. Also shows trends over the last six months by area.

Red/Amber/Green (RAG): Red/Amber/Green system used to colour code the level of attention that a specific item on the dashboard requires. This helps to prioritise importance so the user knows where to focus their attention. Red, amber and green levels are defined differently for each item or widget.

To Be Defined (TBD): Any job opening that has not been filled or the new joiner has not started. A TBD can be classified as either named (when someone has accepted the position or when the position is officially filled but the employee has not started yet) or unnamed (an open position, a position that is in the interviewing process, a position that has been approved, or when an offer has been made but has not been accepted yet). A position remains TBD until the first day the employee starts work.

Widget: A small, self-contained unit containing a visual, such as a graph or list, which summarises data for a specific Key Performance Indicator. A widget can be dragged in, out, and around the dashboard.